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The New Year's Honours

THE New Year's Honours List is marked by the inclusion of knighthoods granted to Mr. John Elliot, formerly Chairman of the Railway Executive and now Chairman of the London Transport Executive, and to Mr. J. O. Sanders, C.M.G., General Manager of the Malayan Railway. The honour shown to Mr. Elliot not only constitutes official recognition of the work done by him during his past and present Chairmanships. It has been awarded in a wider sense on behalf of all the officers and men of British Railways for their service during a very critical period in the industry. Mr. Elliot was the second and last Chairman of the Railway Executive, succeeding Sir Eustace Missenden. He took office when a stage had been reached at which considerable changes were inevitable in the organisation and working of the Executives and Regions. As Chairman of the Railway Executive, it fell to him to implement a more liberal policy of de-centralisation. On the abolition of the Railway Executive under the recent Act, Mr. Elliot became Chairman of the London Transport Executive—the only remaining Executive of the nationalised transport bodies, and, as such, with the exception of the embracing British Transport Commission, the only nationalised transport body to retain its previous form and identity and a Chairman of full status. Mr. Sanders, on his part, represents Colonial railway administration, and the exceptional success achieved under conditions of grave difficulty by the Malayan railways—a system operating in territory which has been in a state of unrest since early in 1948. Among other recipients of honours, a selection of which is given on another page, are Brigadier R. Gardiner, C.B.E., formerly Director of Transportation, War Office, and Commandant of the Transportation Centre at Longmoor, who receives a C.B., and Mr. W. Venner, General Manager of the Sierra Leone Railway, who is awarded a C.M.G. Railway Officers who will be recipients of O.B.E.s include Mr. J. H. Baldwin, Chief Accountant, East African Railways & Harbours, Mr. A. D. M. Brown, Chief Engineer, Iraqi State Railways, and Mr. J. H. Fraser, Chief Officer (Signal & Telecommunications), British Transport Commission.

Higher Freight Rates

APPLICATION to the Minister of Transport and Civil Aviation for authority to increase its charges was decided on by the British Transport Commission last month, when it was also announced that long-distance passenger fares would not be affected; one of the immediate causes of the decision was the 4s. a week increase in pay which had been awarded by the Railway Staff National Tribunal. The application made earlier this week, as reported on another page, is confined to railway freight and dock and canal charges. Of the annual yield of £23,000,000, however, expected from the rise in railway charges, only a relatively small proportion, some £6,000,000-£7,000,000 a year, is required to meet the cost of the 4s. a week railway wage increase. The greater part is required to meet rises in the cost of coal, steel, and other commodities and in depreciation charges; and to provide for a heavy increase in maintenance expenditures charged to revenue, also for the new pension scheme for wages grades. Under the statutory procedure the Minister can authorise the increase with the minimum of delay after consultation with the members of the Transport Tribunal.

Improving Railway Efficiency

CONCRETE suggestions for enabling the British Transport Commission to pay increased wages and salaries to railwaymen without increasing railway charges and without having to ask for a Government subsidy for the railways have been made by Major Malcolm Speir, a former Chief Officer for Scotland of the London Midland & Scottish Railway, in a letter to *The Glasgow Herald*. Some of these he states, were made to him by rank and file railwaymen. His three main proposals involve some, though in fact relatively small, concessions by the staff. The return to the 48-hr. week for wages staff is suggested on the ground that the 44-hr. week plays havoc with home life and many, perhaps most of the old staff, do not like it; and he points out that 48 hours, which is only one-third of the six working days, is a reasonable proportion of human existence to spend in work. His second suggestion is for a more elastic use of the spreadover system at small stations, on branch lines, and where traffic is sparse which, by reducing staff costs, would enable the railways to compete better with other forms of transport.

More Lodging Turns

MAJOR SPEIR'S third proposal is for greater use of lodging turns to reduce operating costs and by improved train working to give better service to railway users. He points out that use of the comfortable hostels, more of which could be provided as necessary, is more than covered by lodging money and does not take rations away from railwaymen's homes; and he pleads for general acceptance by the unions of lodging turns, which are objected to only in certain areas. On the management side he suggests provision of labour-saving devices, such as hopper ashpans and rocker fire grates in locomotives, live steam plants at main-line depots for firing locomotives and heating of offices; fuller use of diesel railcars and diesel units; improved accountancy methods, such as the abolition

of invoicing discussed on another page; suburban electrification, in conjunction with local authorities; and promotion by ability rather than seniority. Finally he appeals for more co-operation between railway management and the unions. Major Speir's 42 years of railway experience, which range from a junior clerkship on the Midland where, in 1905, he worked a 12-hr. day, early and late shifts, to managership of the Northern Counties Committee, L.M.S.R., and, finally, to his Scottish post, give great weight to the proposals he makes with restraint and breadth of vision.

Regional Freight Traffic Originating

MARKED increases over the figures for 1952 of freight tonnages originating in the London Midland Region are shown for the eleventh statistical period of 1953, the four weeks ended November 1. Whilst the total at 23,791,000 tons was 3·3 per cent above the 1952 figure, and the highest since nationalisation, that for the London Midland was 7,004,000 tons, 6·1 per cent above the previous year, compared with increases over 1952 of 0·8 per cent for the North Eastern Region (5,318,000 tons), 2·9 per cent for the Western (4,039,000 tons), and 2·4 for the Eastern Region (3,984,000 tons). In total merchandise tonnage originating, 4,018,000, the Western Region figure of 852,000 exceeded that for the preceding year by 10·5 per cent, and was second in amount only to the London Midland total of 1,206,000, an increase of 4·9 per cent. Of the 5,285,000 tons of mineral traffic, 1,778,000 originated in the London Midland Region, an increase of 7·8 per cent over 1952, whilst the next highest, that of the Eastern, at 1,004,000 was 1 per cent below the 1952 figure. In coal class traffic, of which the all-line total was 14,382,000, 3,990,000 tons originated on the L.M.R., which of the "heavy" Regions again showed the greatest percentage increase, 5·9, over 1952; the next highest tonnage was in the North Eastern Region, 3,757,000, and 1 per cent over 1952, followed by the Western Region, 2,423,000 tons, an increase of 3·6 per cent.

Overseas Railway Traffics

THE total weekly railway receipts of South African Railways & Harbours during November were mostly slightly over £2,300,000, against some £2,000,000 for the corresponding weeks of 1952. All traffics showed increases, coal traffic being outstanding, with receipts for the week ending November 28, the latest for which particulars are available, of £246,406, against £199,244 the previous year. Gold Coast Railway receipts for October were £349,229, an increase of £33,643 over the corresponding 1952 figure; the aggregate for the seven months from April 1 was £2,263,369, an increase of £227,684 over the preceding year. The estimated railway and road service receipts of the Midland Railway of Western Australia for October were £A.59,308, a decrease of £A.2,017 on the previous year, while the aggregate for the four months from July 1 at £A.218,109 also showed a decrease of £A.7,921 on the corresponding period of 1953-54. The November traffics of the Barsi Light Railway, which was taken over by the Government of India on January 1, were Rs. 390,100, compared with Rs. 342,700 a year before, the increase being attributed in part to the incidence in November last of a local fair which fell in October, 1952.

Toronto Underground Railway

TOWARDS the end of the war Toronto and Montreal each prepared plans for underground railway systems to cater for their rapidly increasing populations and to relieve street congestion. The projects were outlined in our April 7, 1950, issue. The Toronto scheme involved construction of line 4·5 miles long, in covered way below or cutting close to Yonge Street, the main thoroughfare. The scheme as a whole has reached an advanced stage and many of the 104 cars, the order for which was placed with the Gloucester Railway Carriage & Wagon Co. Ltd., have now been delivered. When the line is in operation it will carry some 40,000 passengers an hour in each direction, compared with 14,000 passengers by the present surface transport services. It is intended to remove the Yonge Street tram tracks, so that directly and indirectly the underground railway will eliminate some of the worst bottlenecks in the city. Full advantage has been taken in dimensioning the cars of the ample structural gauge of the new line, with the result that their width over doors is 10 ft. 4 in. as against the 9 ft. 8¾ in. width of the latest London Transport surface line stock, and the 8 ft. 4 in. width of the Toronto tramcars. The rolling stock is described and illustrated elsewhere in this issue.

Holiday Travel Arrangements

AT a press conference on December 31, Mr. C. Garstang, Assistant General Manager (Traffic), Thos. Cook & Son Ltd., announced that once again special trains starting from Nottingham and Manchester will transport 5,000 holidaymakers to Scotland. Under a scheme arranged with British Railways by the Creative Tourist Agents' Conference, an organisation made up of representatives from nine travel agencies, 27 special trains will be run from the Midlands and North to Scotland, part of an overall plan worked out between the C.T.A.C. and British Railways to transport an additional 200,000 passengers to continental holiday centres, for which purpose a further 300 special trains will be chartered. These trains, which will be for the exclusive use of passengers holding reservations obtained by, or on behalf of, C.T.A.C., have been obtained at a special rate as a concession to the number in which they have been ordered. At the same press conference Mr. James Maxwell, Cook's General Manager, stated that advance bookings already indicated that the figure of 1,000,000 holidaymakers from this country who went abroad last year will be exceeded in 1954. An overall increase of 10 per cent is expected, to which increase it is believed that the additional currency allowance has greatly contributed. In consideration of this, the accent this year has been placed on cheap and modestly-priced travel.

British Railways Apprentices

BRITISH RAILWAYS, the largest employers of apprentices in Great Britain—11,000 being under training at any one time—have instituted a comprehensive system of instruction for them. Boys of 15½ and younger may enter the Derby Locomotive Works Training School for a year's preliminary training, before entering the main shops as trade apprentices. These younger boys receive a thorough grounding in the practical and theoretical aspects of the life before them, including 12 hr. a week studying theoretical subjects. The training school is recognised in training circles as outstandingly efficient, and the close relationship between the education authorities and British Railways is stressed in a brochure describing the railway training scheme; it is the subject of a brief notice elsewhere in this issue. A very complete shops course is arranged for trade apprentices. Another category of apprentices, known as engineering apprentices, join the railway between 16 and 18 and must hold the General Certificate of Education in four subjects; they have special facilities, and 50 per cent of the vacancies in this category are reserved for keen trade apprentices. Post-graduates aged 21-24 are also admitted as pupils.

American Passenger Train Competition

COMPETITION between some of the principal railways in the United States for long distance passenger traffic has suddenly flared up between Chicago and the Pacific Coast. For a number of years the two principal competitors for the Chicago-Los Angeles traffic—the Atchison, Topeka & Santa Fe Railway, and the associated Chicago & North Western Railway and Union Pacific Railroad—have had 39¾-hr streamline trains operating between these two cities, the last two mentioned with a single train, the "City of Los Angeles," conveying both Pullman and coach passengers, and the Santa Fe with the all-Pullman "Super-Chief" and the all-coach "El Capitan." These three trains have com-

manded supplementary service charges of from $5 to $15, according to class. From January 10 the Chicago & North Western and Union Pacific have swept away their supplements, and have put on an additional 39½-hr. streamliner each way, the "Challenger," which for the first time makes it possible to travel the 2,301 miles from Chicago to Los Angeles with one night only in the train. The Santa Fe has responded swiftly by halving its service charge on the "Super-Chief," abolishing it on the "El Capitan," and speeding up its "Chief" streamliner from 45 hr. westbound and 43 hr. 50 min. eastbound to 39½ hr. each way over its route of 2,227 miles. Now, therefore, five trains each way daily, each needing at least five complete sets of stock, provide rail transport in 39½ to 39¾ hr. between Chicago and Los Angeles.

John Elliot

THE knighthood which the Queen has bestowed on Mr. John Elliot is, first and foremost, an honour to the railway service, of which he was the head until last Autumn. Mr. Elliot would be the first so to regard this. The post is impersonal; it is the people who come and go, and in the process serve, to the best of their ability, the cause they have at heart. This new railway honour is, therefore, something in which all share.

But as it falls on Mr. Elliot to receive the honour, this is an occasion to say something about him and his work for British Railways. It is always instructive (and sometimes salutary!) in these matters to see what the junior staff who serve a man think. They use simple words and have no inhibitions: they take a man as they find him. A messenger at Marylebone found Mr. Elliot "very understanding and most fair and human"; a personal clerk at Euston thought he "could not have had a better boss to work for"; the experience of a woman secretary was that "although he made us work hard, we liked him because he was so friendly"; a typist at Waterloo found him "an exacting though a kind and understanding chief to whom a misspelling or a split infinitive was more serious than a misdated appointment." Most people would value simple spontaneous opinions such as these far more than any elaborate appreciation. No doubt there are now others at London Transport who could add to them. Incidentally, the mere indication of these different headquarters shows the wide range of Mr. Elliot's experience in recent years.

One of the most noticeable things about Mr. Elliot has been how extremely quickly he has developed in the technique of general transport management at the top level. Anyone who has this job to do gets used to the mechanics of it in time; it is not something that can be learned from books or lectures; only actual experience of the job provides it, and once a man has it it is unmistakable. In applying himself to a particular problem an experienced Chief General Manager knows almost automatically when and how to be precise, when to rely on intuition, when to break or "bend" the rules by which all large businesses function, and so on.

It is not unlike driving a car: one acquires the mechanical movements until they are done unconsciously. Nothing but practice in driving produces this. So it is with business general management, and Mr. Elliot reached this stage within two years of his appointment as head of the railways, by which time he was an accomplished business administrator from the point of view of know-how. Of course, there is another side to it. After one has grasped the mechanics of driving a car, the whole concentration is on road sense, on the art of steering and positioning the car. This is equivalent to leadership in general management, and all then depends on the personality and character of the manager. In the glaring limelight in which such a man has to work it is impossible to conceal personal characteristics. This is not the occasion to attempt to assess this aspect of Mr. Elliot's career, but it is interesting to note how popular he is with the junior staff who have served him personally. To them he is evidently a very human and generous personality. The experience of others fully confirms this.

Prospects for 1954

INCREASED efficiency of the railway organisation resulting from the forthcoming joint study of the problem by the British Transport Commission and the three railway trade unions, as agreed before Christmas in the temporary settlement of the wages dispute, is one of the brighter prospects for this year, the seventh year of nationalised transport. The examination is to include investigation of all standard rates of pay, the correction of pay anomalies, and the giving of added incentives, including differentials in pay; the last should go far to change the outlook of many railwaymen and prevent able and ambitious men from leaving the railway service. It is to be hoped that the unions will co-operate by abandoning objections to practices such as lodging turns, which make for efficiency.

There are many other ways in which management and unions can co-operate in devising means of increasing efficiency, as in the abolition of invoices for "smalls" already effective, where, as shown on page 32, the helpful union attitude has had good results. In matters of organisation the joint discussions may be expected to result in improvements in the Regions. The interim organisation at Commission headquarters brought into being on the abolition of the Railway Executive last October under the Transport Act of 1953 presumably will remain more or less in its present form until final approval by Parliament of the more fundamental proposals for re-organisation of the railways, to be submitted by the Commission to the Minister of Transport & Civil Aviation. That, however, can hardly be this year, whereas the results of the joint consideration between the Commission and the unions may be expected sooner.

On the financial side, the economies resulting from the joint discussions are expected to bring in sufficient to meet the cost of the wage increase agreed last month but of a percentage yet to be determined, over and above the cost to the Commission of 4s. a week flat increase already decided. To meet the latter the Commission is seeking authority for raising freight rates, as described on another page. With the accumulated deficit and higher costs, the total amount to be found this year may be large, but with economies, and with traffics maintained at recent levels, where there have been increases in coal, minerals, and merchandise, the prospects as to freight traffic at least are fair. In passenger traffic, which had held its own against other forms of transport last summer, the indications seem to be that public purchasing power would not justify any increase in holiday fares, though with the natural growth of population, with housing developments, and with the inability of the roads to deal with great increases in suburban traffic, the revenue outlook is not unhopeful.

A mild winter so far and relative freedom from fog have eased the operating position and the emergency organisation is ready to deal with any operating difficulties arising from severe weather during the remainder of this winter or at the end of this year. The success of the passenger train accelerations last summer should result in further accelerations in the summer services this year; here again, as in increasing the number of lodging turns, accelerations and better service generally should result from co-operation by the unions.

This year will see the introduction of the class "9" 2-10-0 type freight locomotive and of the diesel trains to operate in West Riding, West Cumberland, and other districts. The principal capital work completed is likely to be the Manchester - Sheffield - Wath electrification including Woodhead New Tunnel. The rolling stock building prospects are fair mainly because of the increase in steel supplies. Including vehicles built by private builders, some 2,800 passenger vehicles are expected to be added to British Railways fleet this year, and 53,000 freight vehicles, also inclusive of construction by private builders, which should more than make up the backlog of 32,000 wagons at the end of last year.

The holding of the Sixteenth International Railway Congress in London next May will be an outstanding event in British Transport, as shown on the article on the next page.

Invoicing for "Smalls" Abolished

A FULL-SCALE all-line experiment in dispensing with the goods invoice for all consignments up to one ton in weight dealt with through their goods sheds was inaugurated by British Railways on January 1. Subject only to such modifications of method as may be proved necessary from the first month's experience, and after reviewing it both with Regional managements and with the executives of the trade unions concerned, this arrangement will be adopted as a permanent feature from March 1 next.

This fundamental revision or modernisation of clerical working methods is a matter domestic to the railways, and is unlikely in any way adversely to affect the trading public. Indeed, there are good grounds for expecting that the higher standards of checking which the system will entail will improve the general security of traffic entrusted to British Railways. Moreover, enough is already known from pilot tests conducted at selected centres about the country that the efficiency of goods shed working will be improved and risks both of damage and of terminal delays will in consequence be lessened.

The system does, however, require that small consignments shall be fully addressed and shall be carriage paid: not necessarily carriage paid home, as charges for extraneous services which may be required by the customer at the terminal end can still, and will be separately raised there. Where railway users have been in the habit of using their own forms of consignment note this can still continue, and inquiries for goods can be addressed either to forwarding or destination station as the customer wishes and will be handled with the same attention as hitherto.

The practice of the railways for years has been separately to invoice every consignment, however small or large, and in theory to provide for a copy of the invoice to accompany the goods to destination station or to be so despatched by other means to destination station as to arrive in advance of the goods. At destination station this copy of the invoice has been used for the preparation of delivery sheets individual to each consignment, however small, against which delivery sheets a check has been imposed as goods are transferred from rail wagon to delivery van, and upon which delivery sheets customer's signature for the goods has been obtained. In practice and for various reasons many of these invoices have never synchronised with the arrival of goods which have had to be treated as "unentered" and a memo delivery sheet made out for subsequent check with the invoice; in other cases invoices have arrived without the goods and goods have in consequence been treated as "not to hand." Both these circumstances have involved an elaborate system of recording and checking and a great deal of correspondence.

The general introduction during the war of carriage paid arrangements for the bulk of traffic handed to the railways itself provided the opportunity for eliminating the double-entry system of accountancy essential to the safeguarding of the railway debit where goods in transit might either be carriage paid or "to pay" respectively. At that time this facilitated an appreciable saving in manpower.

Before the war in a goods invoicing office at a station, great pressure of work was involved in the attempt to complete invoice charging in respect of all goods brought in during the current afternoon and evening so that the invoices might be currently despatched with the goods. The carriage paid system provided the opportunity of relief from this pressure; and there was introduced what became known as the "weight only" system of invoicing, which had the twofold effect of reducing the volume of invoice writing work performed at night and postponing the charging of it to day shift working in conditions more conducive to accuracy, which reacted favourably on presentation of accounts to the public.

Abolition of the goods invoice for "smalls" carries this progress on to its most productive stage. The consignment note becomes not only the foundation for the debit, but the document on which the debit is raised; whilst at the forwarding end its function remains as the check between the entry on the consignment note and the goods brought in. As the consignment note will represent the debit besides being a working document at the forwarding end, it becomes essential to safeguard it by a system of registration before it is released to the goods shed for working purposes.

Because no delay must occur between arrival of goods at the shed and their discharge and loading into wagons, at all the medium-size and larger stations registration of consignment notes will be performed by the micro-film processes, the two types of instrument finally selected for these purposes being the Kodak Recordak and the Burroughs Recorders and Readers. The sequence, therefore, is immediate registration of consignment notes on arrival of the road vehicle at the freight terminal; immediate release of these notes to the working bank for check with the goods on the drays; and return of notes to the appropriate offices for charging and passing to the accounts sections.

Goods travel forward to destination station without accompanying documentation. On arrival the contents of wagons are discharged to drayside, and there at each cartage post and for each road vehicle a multiple-entry delivery sheet will be prepared from the addressed labels on the packages by the drayside checker, signatures being obtained on this multiple-delivery sheet at the appropriate line of entry for each consignment on delivery.

The object of the change is simple: the introduction of a new system of accountancy for consignments under one ton by goods train such as will admit of substantial economies in operation without deterioration in efficiency or service. Economies are expected to include a reduction in railway staff of some 2,250 clerks, and a saving of stationery at the rate of £100,000 a year and of some 500 typewriters; in the aggregate, an anticipated economy of about £1,000,000 a year.

The scheme has been developed with the fullest co-operation of the management of all the Regions of British Railways and has been the subject of full consultation with the Transport Salaried Staffs' Association and the National Union of Railwaymen. Undertakings were given on behalf of the British Transport Commission that no man displaced would lose his employment or suffer loss of his present grade. The problem would be resolved through the normal processes of wastage. Members of the existing staff so displaced would be progressively accommodated in vacancies at their appropriate grade as they arose, and the fullest regard paid as to agreement undertakings in respect of travel and so on. Having regard to the additional responsibilities which it was felt may fall on the drayside checkers it was agreed in discussion with the N.U.R. executive to make these posts the equivalent of senior checkers.

The Sixteenth International Railway Congress

MANY changes in railway techniques and organisation have taken place in Britain since the International Railway Congress Association, of which the sixteenth session will be held in London next May, held its tenth session here in 1925. Delegates on that occasion could compare methods and standards on four separate British main-line railways, whereas now, after six years of nationalisation, a great measure of uniformity has necessarily resulted. On the other hand there have been many technical developments, such as those in diesel traction, in the past 29 years, in which the railways of this country have either led the way or adapted design and practice to suit their own requirements. The 400-500 delegates from railways in nearly every part of the world cannot fail to find much of absorbing interest to railwaymen in what they will have the opportunity outside the Congress proceedings of seeing on British Railways, the busiest main-line system in the world, and on London Transport railways, the biggest urban railway undertaking.

The progress made and new developments on British Railways in various activities and the places to which technical visits will be paid will be the subject of a special issue of *The Railway Gazette*, which also will be responsible for the daily bulletin made available to delegates each morning and summarising the previous day's proceedings in the several sections. Apart from visits to railway

installations, delegates will have the opportunity of visiting the plants of British manufacturers supplying material to railways in this country and overseas, a sphere in which this country has a great deal to show visitors from abroad.

The programme of the sixteenth congress generally follows the customary pattern. The subjects for discussion are grouped in five sections: way and works; locomotives and rolling stock; working; general; and light and colonial railways. Instead, however, of each section embracing three questions, as at the previous session in Rome in 1950, only one, the general section, will do so, the others dealing with only two questions each, making 11 in all. On each of the 11 questions a senior officer of one of the member railway systems prepares on behalf of the Railway Congress Association a report co-ordinating the replies to the question concerned which have been sent in by the railways in a group of countries. Summaries of these reports will be published, beginning in the near future, in this journal.

The International Railway Congress Association is the only world-wide body which deals specifically with railways. The International Union of Railways (U.I.C.), which embraces nearly all the railways of Europe and those in the Near East and North Africa which form part of the European system, is regional in character, as is the Association of American Railroads. There are also the regional economic organisations of the United Nations which are concerned inter alia with railway problems. The International Railway Congress Association, however, deals with questions of interest to railwaymen and those connected with railways all over the world, and all but the smallest undertakings can participate as members. The papers for discussion afford a comprehensive review of railway practice in countries differing greatly in economic development and physical and climatic conditions, and the subsequent discussions at sessions give senior railway officers a unique opportunity of expressing their views and explaining practice on their own systems.

The Past Year on the C.N.R.

THE total earnings for the Canadian National Railways in 1953 are expected somewhat to exceed the record 1952 figure in spite of a general and serious falling off in freight traffic which was experienced in the last quarter of the year. The higher revenue figure is accounted for by rate increases which became effective during 1953, but expenses have mounted even more sharply, partly because of higher average prices of materials and supplies but more particularly because of heavy increases in wages. The wages paid out in 1953 were $36,000,000 more than in 1952. When, therefore, the 1953 accounts are closed, says Mr. Donald Gordon, Chairman & President, Canadian National Railways, in his review for the past year, the new revenue found from the increased rates will probably not be sufficient to meet the increased expenses of operation.

The downward trend in freight traffic volume was the result principally of decreases in pulpwood, anthracite and bituminous coal, but there was a substantial falling off also in the movement of crude oil, agricultural implements, fuelwood, grain, flour and less-than-wagonload consignments. Motorcar bodies and parts registered some tonnage increase and slight percentage gains were observed in such bulk commodity traffic as ores and concentrates, gravel, sand and crushed stone. The serious overall decline in the physical volume of tonnage moved, even though the nation's business activity and industrial development were at record rates, raises disturbing questions which call for careful analysis. Most significant is the diminishing traffic against a background of steadily increasing costs of operation and intensified competition from other transport agencies. Such competition is encouraged by the growing discontent of consignors with rising railway freight rates which cause them to search for every opportunity to reduce their consignment costs. In such circumstances, the diversion from the railways of high-rated traffic is seriously undermining their ability to carry bulk traffic at marginal rates. The diminished volume and revenue position also appears in passenger traffic accounts. Both sleeping and dining car patronage is down, against the previous year.

Improvements were initiated in passenger service, including a teletype reservation system to all major centres in the West. On transcontinental trains, special low-priced budget meals were introduced. A department of tours was established to provide well-organised all-expense "package" trips embracing transport, hotel accommodation, meals, and other features. New equipment now on order should materially improve passenger service. Delivery of the 302-car vehicles on order (161 day coaches and 141 sleeping and parlour cars) has begun, and a coach or two a day will be received until the order is completed. Supplementing the new rolling stock is a programme of modernising existing stock being carried out in C.N.R. shops. Freight wagon supply is ample for current demands, and new contracts ensure an orderly supply to meet future traffic requirements. Some 4,300 units delivered in 1953 brought to more than 30,000 the number of new wagons put into service since 1945. More than 6,000 units are still on order; delivery of most of them is expected next year.

One hundred and three diesel units added brought the total in service to 497. They have been placed in selected services where the greatest economies can be made. The training of employees in diesel operation and maintenance is progressing satisfactorily. A new Budd stainless steel diesel railcar was received late in December to operate in passenger service between Fredericton and Newcastle, New Brunswick.

The extension of railway-owned and operated highway services, a necessary step in the direction of reducing operating costs and affording an improved service to the public may result in some improvement in the railways' competitive position. A few additional highway routes were established by the C.N.R., but such services are, and will continue to be, regarded as complementary to rail operations. The latest development in freight service, the transport of railway-owned road trailers on specially designed flat wagons, was extended last year to include Hamilton. This service is still in the experimental stage.

The new 144-mile branch from Sherridon to Lynn Lake in Northern Manitoba went into service in November. Grading and clearing of the 45-mile line from Terrace to Kitimat in British Columbia advanced during the year, and construction of the substructure for a seven-span bridge over the Skeena River began. Other major construction projects include a slip at Prince Rupert for rail barges; an extension to the ore dock at Port Arthur; improved freight terminals, trackage and yard facilities at Toronto and Montreal; and the extension of centralised traffic control and automatic block signal systems in Ontario and British Columbia. The new central building of Jasper Park Lodge was opened last June. There was an overall improvement in business at summer resorts and year-round hotels, and revenues were expected to be higher than in 1952. The new wing of the Macdonald Hotel in Edmonton and modernisation of the Newfoundland Hotel at St. John's were completed.

Plans were announced for the construction of a large modern hotel in Montreal. Financial provision for the project will be made in the next budget submitted for approval of Parliament. The hotel will contain more than 1,000 rooms, with public facilities capable of accommodating 2,500 persons at banquets and more than 4,000 at meetings. The hotel project is part of an extensive terminal programme which has been under intensive study for the past three years. It envisages, among other things, the building of a 28-storey railway office building and the development by private capital of a shopping, theatre, office and apartment district on this site.

The modern ice-breaking ocean ferry *William Carson* was launched in November, and is expected to go into the Newfoundland Cabot Strait service in the summer. New dock facilities have been completed at North Sydney and construction is well advanced on a similar installation at Port-aux-Basques.

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

Preserving Historic Rolling Stock

December 22

SIR,—When the Mersey Railway trains are replaced by new stock in the near future, it is to be earnestly hoped that a motor and trailer car of the original clerestory roof type will be reserved for eventual preservation. Of all the American type cars to run on British electric lines, these Mersey trains are the most faithful reproductions and have given the longest service of any. It would be a great tragedy if all these fine old cars were consigned to the scrap heap.

With main-line stock we are entering almost the eleventh hour for saving pre-group vehicles. Perhaps our future railway museums could contain besides locomotives a selection of carriages and wagons, which while fairly common today will achieve great historic value in only a few more years.

Yours faithfully,

J. W. GAHAN

11, Russian Drive, Liverpool 13

British Railways International Services

December 11

SIR,—Most criticisms of British Railways and associated undertakings cross-Channel services made in letters published in recent years in your journal have been directed at : (1) lack of integration of steamer with British local train services; (2) higher than standard fares between British station and packet port charged or special class travel enforced in through bookings; and (3) exorbitant steamer fares. This does not apply to services to Ireland and the Channel Islands, or to the North Sea services to Scandinavian countries.

The only complaint of the Harwich-Hook services is of the high steamer fares. There are good connections between a variety of local stations in Great Britain and Harwich; and combinations of class travel in Britain, in the steamer, and on the Continental railways are available to suit the traveller.

The Harwich-Hook steamer fare is criticised as excessive compared with similar services to Ireland or the Channel Islands over similar distances. Although it includes a berth in a cabin in both first and second classes without additional charge, which the other services do not, no reduction is given when berths are not available or on the day service when they are not required.

On the Southern Region routes the complaint is of poor facilities, of fares and charges, and of discriminating practices and anomalies, the first of these being largely postwar.

Inadequate facilities include lack of train connections other than by London boat train to Dover, Folkestone, and Southampton though the Southampton boat trains in general call at Basingstoke and Winchester or Eastleigh and give connections with a fairly wide area. The absence of through fares other than from London is particularly annoying to the passenger leaving the country by one route and returning by another; on the return, as his ticket cannot contain a coupon from the port to a station other than London, he must make sure that he has saved enough of his £5 sterling to book his ticket from the port to his home. There is no through baggage registration to places other than London. Before the war, through facilities both direct from the ports and via London existed on a generous scale. In those days the inter-station bus service in London ran throughout the day and carried registered baggage besides passengers. The existing inter-station service for parcels and luggage in advance could be used to convey registered baggage as is done between Paris termini.

Third class tickets are issued via Calais to destinations short of Paris, and to Eastern France, Switzerland, and beyond via Lille or Laon, but no third class bookings are made via Calais and Paris apparently because the Calais-Paris boat trains do not carry third class passengers.

Although British Railways do not show it in their Continental timetables there is a train (No. 34) which conveys third class passengers connecting with the morning steamer. It is shown in most Continental railways' international summary timetables. As a result one can buy a third class ticket from Paris to London return via Calais, but not one from London to Paris. This is an attempt to force passengers by the short sea route to travel second class. As for the anomalies, one can buy a third class ticket via Dieppe and then have it excessed via Calais.

The same applies via Dover-Dunkirk, by which route British Railways will not issue third class tickets to Paris and beyond. In the reverse direction, the French National Railways issue tickets, which can be excessed to second for the section Paris-Dunkirk if the third class passenger wishes to travel by the "Night Ferry" train; he can still travel much more cheaply than by booking second throughout, because of third class travel between Dunkirk and London.

With fares and charges the greatest source of annoyance is not so much the very high fares between London and the French ports, for part of which British Railways are not responsible—the inordinate French port dues and landing taxes—but the refusal to let the passenger take the maximum advantage of what cheap fares may be available by travelling third in Britain and on the sea and second beyond, where there is only 25 per cent difference between the second and third class fares in France.

Yours faithfully,

G. H. HAFTER

107 Mortlake Road, Kew

[At existing fares it is possible for the B.T.C., which is under the statutory obligation to make its services pay, to fill available shipping accommodation satisfactorily for the greater part of the year. The great disparity between the various services in matters such as the number of passengers and motorcars and volume of merchandise that can be conveyed, invalidates comparison between them. On the Harwich-Hook service, for instance, fares are only some 80 per cent above prewar despite the great rise in operating costs; the booking of passengers by the night service without berths is not encouraged, so as to keep the public rooms available for passengers in cabins for social and refreshment purposes. Booking and other facilities generally are provided in response to public demand.—ED., *R.G.*]

Experiment in Traction Practice

December 28

SIR,—Might I ask the source of the evidence as to the riding qualities of multiple unit electric stock given by Mr. W. J. Williams in his letter published in your December 25 issue?

My cardan shaft, or a Swiss disc drive, is for 500 h.p. per axle; the Southern Region motors referred to by Mr. Williams are of about 250 h.p.; so the comparison is rather unfair. " Smaller motors and more of them " surely neither improve riding nor reduce complication.

I also challenge the statement that an admittedly more complex system is necessarily less reliable and more costly to maintain, if properly engineered, than a simple system subject to all sorts of sudden shocks.

The very reason why my Swiss friends use spring drives is that the extra initial cost is more than offset by reduced maintenance costs, both in the motor coaches and on the track.

I agree with Mr. Williams' last paragraph, especially as far as bogie design is concerned. Another point is that

axle-hung motors are usually mounted with a lower centre of gravity than that of their spring-borne equivalents; this is not a characteristic of the type, but too low a centre of gravity of any motor inside a bogie frame inevitably produces a tendency to side hammering of rails and bogie hunting.

Yours faithfully,

J. RODGERS

"The Cottage," 132, Worrin Road, Shenfield, Essex

Three-Aspect Signalling

December 20

SIR,—The summary of the report of the accident at Gollanfield Junction in your issue of December 18 again seems to suggest the advantages of three-aspect signalling.

With the home only clearing to the cautionary aspect a driver would know he could draw up to, but must be prepared to stop at the next signal, the full clear being reserved for a clear line right through. The starter, or advanced starter, as the case might be, would only use the full clear and stop aspects if the next set of signals were only reached after some miles, the caution being displayed if necessary by the distant.

It is a pity the 45-deg. aspect has become the full clear instead of the original caution. A two-arm signal could be used, the lower akin to a distant or a repeater. A three-position arm would be better if it could be used. In the case in question it seems likely the over-run would have taken place in any case, but the effects might have been less serious.

Yours faithfully,

COURTENAY BARRY

The Old Manor, Salisbury

Publications Received

The Story of British Locomotives. By R. Barnard Way. Methuen's Outlines series. London: Methuen & Co. Ltd., 36, Essex Street, W.C.2. 8½ in. × 6½ in. 75 pp. Price 8s. 6d.—This is one of the first books of a new reference library, covering diverse subjects, for the 10 to 15 age group. The evolution of British locomotives from their origin to the present day is traced simply but comprehensively. The main stages of mechanical development are clearly narrated, and well illustrated among 90 line drawings by the author.

The North British Locomotive Co. Ltd., 1903-1953.—The North British Locomotive Co. Ltd. was formed fifty years ago by the amalgamation of Neilson, Reid & Company, Dübs & Company, and Sharp Stewart & Co. Ltd., and to mark this occasion the company has issued an illustrated book which presents in concise form the history of an organisation which began to build locomotives 120 years ago. In 1833, Sharp Roberts, later Sharp, Stewart & Co. Ltd., built their first locomotive for service on the Liverpool & Manchester Railway. The publication provides an historical survey of the three constituent members and much interesting information on earlier designs of locomotives including the "Sharp Singles" of which some 600 were built in various sizes with cylinders from 12½ in. to 17 in. diameter and with wheels from 5 ft. to 6 ft. diameter. The majority were built for the railways in this country, but a considerable number were shipped to the Continent. The publication also deals with other activities of the company other than steam, diesel-hydraulic, diesel-electric and electric locomotives, and the North British-Parsons development of a coal-burning gas-turbine locomotive, a prototype of which is being built to the order of the Ministry of Fuel & Power. The combined firms have completed some 28.000 locomotives which have been distributed, 9,550 to British Railways; 2.500 Europe; India and the Far East 7,900; Africa 3,400; Australia and New Zealand 1,100; and North and South America, and miscellaneous 3,300. The book includes many good half tones and colour plates.

Apprenticeship with British Railways: Derby Locomotive Works Training School.—Derby Mechanical & Electrical Engineers' Office, London Midland Region. 10 in. × 8 in. 32 pp. Illustrated. This well-produced brochure outlines the aims and methods of British Railways in the training of their 11,000 apprentices as craftsmen, and those at Derby in particular. Boys of 15½ and under are admitted to a one-year preliminary practical and theoretical course at the Derby Works Training School, and then pass on as trade apprentices in the main shops: apprenticeship terminates at the age of 21. Other youths having the General Certificate of Education in four or more subjects are also admitted and receive an all-round engineering training in all shops and at Derby Technical College. They are known as engineering apprentices, and work for a Higher National Certificate in Mechanical or Electrical Engineering, or an external Engineering Degree of London University. Pupils are also admitted, but must have an engineering degree and be between 21 and 24; theirs is a two-year course. All this is explained and elaborated in this brochure further reference to which is made in an editorial note in this issue.

Der Gleisbogen: Seine geometrische und bauliche Gestaltung. (Curved Track: Its Geometrical and Structural Design.) By Gerhard Schramm. Second Edition, 1954. Darmstadt: Otto Elsner: 8½ in. × 6 in. 302 pp. 111 illustrations, 20 tables. Price D.M.20.—This is one of the few books exclusively and comprehensively covering the subject of curved track. The first edition was published during the war and therefore has probably remained largely unknown in this country. Recent advances in the design of curved track, and particularly points and crossings, have already necessitated a wholesale revision. The subject is discussed lucidly, with the aim of helping not only the student but also the technician concerned with marking out and other work on the line. The author deals with superelevation and transition ramps, circular and transition curves and short S-curves. There are chapters on the geometry of arcs and straight and curved points and crossings. Of particular interest is the discussion of the checking of curves, including a detailed account of tests with the track testing car of the German Federal Railway, and of the structural design of curved track, including compensation. The last chapter is largely theoretical in the nature of an introduction to the problems connected with the running of vehicles through curves.

Mobile Cranes and Excavators.—A series of booklets has recently been issued by Ransomes & Rapier Limited, which give relevant details of locomotive timetables, railway breakdown cranes, excavators, fork trucks, drag-shovel equipment, and so on. The many types of equipment are illustrated by a number of half-tones showing the equipment in use, with a number of diagrams. Also included is a table of dimension giving the various capacities of the equipment, turning radius, safe working loads, and other particulars necessary to intending purchasers.

Kynal Aluminium Alloys.—An illustrated booklet issued by Imperial Chemical Industries Limited, gives details of Kynal aluminium alloys and fluxes for brazing. The methods include torch brazing in which the filler wire is dipped in flux and run into the joint with a gas torch, or furnace brazing in which the parts are assembled with flux and filler in position. The assembly is then heated to the correct temperature in a furnace, when the brazing alloy flows and fills the joint. A further method is termed flux-dip, in which parts are assembled with filler in position, and immersed in a bath of molten flux kept at desired temperature. The methods are said to be particularly suitable for mass production methods.

THE SCRAP HEAP

Well Drilled

A workman was using his pneumatic drill in the grounds of Kings College, between Victoria Embankment and the Strand. Suddenly it went through the roof of the District Line tunnel between Charing Cross and Temple stations. The roof is only two feet below ground. —*From the "Evening Standard."*

George Stephenson to Wright Brothers

There will be celebrations in this country and the United States to mark the fiftieth anniversary of the Wright brothers' first flight. On the day it took place (December 17, 1903) Mr. T. Marshall, of Spennymoor, fireman of Stephenson's first locomotive, died, aged 90.—*"Peterborough" in "The Daily Telegraph."*

Australian Railway Pioneer

Mr. Roy H. Holden, of Geelong, Victoria, chanced on the grave in the Eastern cemetery of Henry Walters, locomotive engineer of the Geelong & Melbourne Railway Company. The grave was overgrown with weeds, only the top of the headstone being visible. Mr. Holden tidied up the grave and had the sides of the grave concreted by a local firm.

From an illustration in the *Victorian Railways News Letter* Mr. Holden made a pattern of *Titania*, one of the locomotives, and had the casting done by a local foundry. Henry Walters was killed on the day the railway was opened, June 25, 1857, being knocked off the engine *Sirocco*, which hauled the inaugural train, as it passed under a bridge.

The centenary of the first steam-worked railway in Victoria and in the Australian continent is on September 13 next; on that date in 1854 the Melbourne & Hobson's Bay Railway Company opened its line between Melbourne Flinders Street and Sandridge (now Port Melbourne).

Photo] [*V. R. Newsletter*

The grave of Henry Walters, first locomotive engineer of the Geelong & Melbourne Railway

Beyond the Pale

One of the important duties ladies (at the turn of the century) had to perform was going to London for the day to shop. They had to catch the 8.30 train from Cambridge to Kings Cross. In those days no one ever went to St. Pancras by the Great Eastern Railway if they could help it; and Liverpool Street was unknown to the genteel.—*From "Period Piece," by Gwen Raverat.*

Eleven Miles Without Engine

About 30 passengers who boarded the night passenger train from Bangalore City to Mysore woke up to find the coaches in which they had gone to sleep had broken loose from the formation at the platform. They covered 11 miles before they came to a halt, after running down a gradient at speed and passing Kengeri station, eight miles from Bangalore.

The coaches stopped of their own accord some distance further on. They were hauled back to Bangalore and the train left four hours late. Except for one passenger who jumped out at Kengeri, nobody was injured.

The train is allowed in the timetable 7 hr. 15 min. for the 86 miles from Bangalore City to Mysore.

The North and West Route

The opening day for the new route from South Wales to the North (on December 6) was an event of vital interest to the new district into which the advantages of railway communication have now been extended. The junction of these two lines of railway now forms a distinct line of communication from Newport, in Monmouthshire, to Shrewsbury and the railways in the north, giving the inhabitants of South Wales a shorter communication with the great manufacturing and mineral districts of Staffordshire, Shropshire, Lancashire, etc. . . . From Ludlow to Shrewsbury the line has been in work for some time, being leased to Mr. Brassey, the contractor. This is a single line.

These new lines will open up a large tract of country hitherto comparatively unknown, and will give both to the mining and agricultural portions of it facilities and advantages the want of which has thrown them behind the neighbouring counties.—*From "The Times" of December* 8, 1853.

[The Newport, Abergavenny & Hereford and Shrewsbury & Hereford Railways were both authorised in 1846. The first named was amalgamated in 1860 with the Oxford, Worcester & Wolverhampton and Worcester-Hereford railways to form the short-lived West Midland system, itself amalgamated with the Great Western in 1863. In 1862 the Shrewsbury & Hereford became a G.W.R.—L.N.W.R. joint line.—ED, *R.G.*]

Long Service in Restaurant Cars

Two recently retired senior restaurant car inspectors of the Eastern Region between them have given personal service to Royalty over five decades and met practically every notability. Mr. C. E. Richards estimates that he has travelled 5,500,000 miles by rail without untoward incident since he first started in 1902 with the G.N.R. He was first class restaurant car conductor on the "Flying Scotsman" at the age of 17. He served tea to King Edward VII as a lad attendant aged 15, and he remembers that a special Crown Derby tea service was used; it is still preserved. The Royal Victorian Medal was presented to him in 1945.

Mr. A. H. Mole joined the G.E.R. Hotels & Restaurant Car Department in 1904. In many years service, largely with boat expresses between Liverpool Street and Harwich, he has given personal service to the British, Danish, and Netherlands Royal families and to the King of Norway. He was personally awarded the Danish Silver Medal by the late King Christian X and the Danish Gold Medal by the present King of Denmark.

1954

Off with you now, old '53,
We loved you well, but . . . R.I.P.
When you first came out of the night,
In dewy innocence bedight,
Hope once again became a guest,
For a brief season, in my breast.

What lies ahead we cannot tell
(Between ourselves that's just as well),
Yet, as the bells ring out once more
To usher in young '54,
Even my old, case hardened heart
Thrills to the thought of a new start.

Many an old, respected firm
Needs a new "facial" and a "perm,"
Railways as well. Now, B.T.C.,
Here is your opportunity
To make them worthy of their place
In this exacting year of grace.

New brooms, intent on sweeping clean,
Tend to ignore the might-have-been,
Which, naturally, we deplore.
But what's to come concerns us more;
Stifle that sigh! Control that curse!
If times seem hard, they might be worse.

So much of marvel and surprise
Beyond the far horizon lies,
So, if the outlook seems obscure
At times, we can at least be sure
Our lords and masters will contrive
More fun and games for '55!

A. B.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

TASMANIA

Delivery of Tractors by Rail

A record consignment of British-made Ferguson tractors was delivered to farmers in November. A special train was formed to transport 30 of the tractors from Hobart to the agricultural areas of the north-west coast. The train, labelled the "Ferguson Special", was hauled by English Electric-built diesel-electric locomotives, and covered the 223 miles in twelve hours. The tractors and implements were loaded in "A" class (open) wagons of 7-ton capacity.

SOUTH AFRICA

New Bridge at Virginia

A new bridge is now being built across the Sand River near Virginia, Orange Free State. The construction of this bridge is part of the programme to double the line between Kroonstad and Bloemfontein, a project which it is estimated will cost £4,153,000.

In the course of doubling this important main line, other improvements to the track are being made. Where necessary, the line is being straightened and gradients eased. The new bridge became necessary when the line between Cronnel and Kalkvlakte had to be straightened and improved.

The bridge will carry a double track. Construction, expected to cost £100,000, is being carried out by private contract. The bridge, 75 ft. above normal water level, is of concrete and is supported on concrete piers.

The old bridge is historically interesting because it was blown up during the South African war and the old stone columns were rebuilt in concrete. This bridge will in future carry the inter-town line from the new Virginia Station through the Harmony suburb of Virginia and across the Harmony mine to link up finally with the existing line at Welkom and thus provide a route between the new goldfields towns of Virginia, Welkom, Odendaalsrus and Allanridge.

Suburban Traffic

The Cape Town suburban system showed an increase during 1952-53 of nearly 5,000,000 passenger journeys in comparison with 1951-52. Durban recorded an increase of nearly 1,250,000 passenger journeys and in Pretoria, East London and Port Elizabeth there were also increases in suburban journeys.

On the Witwatersrand, on the other hand, a decline of 1,167,421 suburban passenger journeys was recorded. The decrease was entirely in native location traffic which dropped by 1,705,901 passenger journeys during 1952-53. The decline on the Witwatersrand can be partly explained by the increasing number of third-class passengers who travelled without tickets. Since the introduction of the barrier system at certain stations in the Witwatersrand suburban area, the situation has begun to improve. During July, 1953, 222,642 more single and return tickets and 55,998 more season tickets were sold on the Witwatersrand than during July, 1952.

In Cape Town, a diversion of passengers from buses to trains became noticeable some years ago, and the impressive increase of nearly 5,000,000 passenger journeys recorded on the suburban system in the Cape Town area is partly due to this tendency, though the growing industrialisation in the Cape Western area is also a contributory factor.

The total number of suburban passenger journeys recorded during 1952-53 was 234,742,090, an increase of 5,586,711. The upward tendency in third-class suburban passenger traffic is being maintained. During August, 11,435,144 third-class passenger journeys were recorded, an increase of 725,437 on August, 1952.

BELGIAN CONGO

Otraco Diesel Operation

The Belgian Office d'Exploitation des Transports Coloniaux (Otraco) has just taken delivery of six 96-ton, 1,600 b.h.p. diesel locomotives of Baldwin-Westinghouse type from John Cockerill, of Liége; and of eight 1,600 b.h.p. diesels of general G.E.-Alco type from Baume & Marpent, of Morlanwelz. These locomotives are now going into traffic on the 3 ft. 6 in. gauge Matadi-Léopoldville line, where they will supplement the handful of G.E.-Alco locomotives at work there for the last two years, and will enable more or less the whole of the heavy haulage on this 227-mile line to be diesel worked. Eleven Baume & Marpent 350 b.h.p. diesel shunters are already at work on this system; and the Leopoldville Harbour authorities have a Hunslet 204 b.h.p. diesel shunter.

CANADA

Mount Royal Tunnel Builder Honoured

A plaque has been unveiled at Montreal Central Station, C.N.R., to the memory of the late Henry K. Wicksteed, the engineer mainly responsible for the building in 1918 of the three-mile Mount Royal Tunnel, Montreal.

At the ceremony, Mr. Donald Gordon, C.N.R. Chairman & President, paid tribute to the foresight of the engineer who made possible the Central Station development and a suburban town on the north side of Mount Royal. The ceremony marked the 35th anniversary of the first regularly-scheduled passengen train trip through the tunnel, 600 ft. under the summit of Mount Royal, which terminated at New Tunnel Station where Central Station now stands.

UNITED STATES

New "Challenger" Streamline Trains

On January 10, radical improvements are being made by the Chicago & North Western Railway and Union Pacific Railroad in their joint service between Chicago and Los Angeles. For the first time on record it is now possible to complete the westbound journey with no more than a single night in the train. This is by a new streamline train called the "Challenger" which leaves Chicago at 9 a.m., provides a new 8 hr. day service to Omaha (488 miles), leaves Omaha at 5.10 p.m. and Salt Lake City at 8.50 a.m., and reaches Los Angeles at 10.30

On the Tanga Line in East Africa

Photo] *[F. H. Worsfold*

Sentinel 0-4-0 *steam locomotive shunting Tanga-Arusha mail at Moshi, Tanganyika, East African Railways*

p.m. on the second day. Allowing for the 2 hr. gained in this direction by the change from Central to Pacific time, this is a total of 39½ hr. for a journey of 2,301·2 miles (58·3 m.p.h. overall, including stops and the climb to Sherman summit (8,013 ft.).

In the reverse direction, the loss of 2 hr. makes the journey with one night only in the train difficult to arrange without an unreasonably early start or late arrival; the eastbound "Challenger" therefore leaves Los Angeles at 2 p.m., Salt Lake City at 5.50 a.m., and Omaha at 11.45 p.m., reaching Chicago at 7.45 a.m. on the third day, after a journey of 39¾ hr. An attraction on these trains is the exceptionally low cost of meals, which are priced at from 65 cents only for breakfast, 85 cents for lunch, and $1 for dinner.

The "Challengers" replace the "Los Angeles Limited," which took 9 hr. 24 min. longer westbound and 8 hr. 24 min. longer eastbound than the new service. They are equipped with reclining chair coaches and Pullman sleeping cars of the latest type, and are available to passengers without supplementary service charge. The special service charge of $15 first class and $5 coach class charged hitherto on the 39¾ hr. "City of San Francisco" streamline trains has been abolished at the same time.

VENEZUELA

Micro-Wave Operation

The United States Steel Company's new diesel-worked railway now open between the Cerro Bolivar mines and the harbour of Puerto Ordaz is making use of micro-waves for the remote control of switches, signals and interlocking, and is believed to be the first railway in the world to do this.

ARGENTINA

Track Relaying and Other Works

The D.F. Sarmiento Railway is to relay all its main line tracks between km. 3·5 and 10 (Caballito—Liniers) at a cost of 14,000,000 pesos. The General Mitre Railway will relay both tracks between Maldonado Junction and Tigre. The General Belgrano Railway is about to proceed with the reconstruction of Salta station, and the General San Martín Railway will spend 3,500,000 pesos on the reconditioning of scrap and other material in the Eva Perón Works at Junín.

BRAZIL

Extensions and New Equipment

The Brazil-U.S. Commission's project to re-equip the Sorocabana Railway has received Presidential approval. This line, carrying the heaviest goods traffic per km. of any Brazilian railway, serves a rich agricultural and timber district, embracing nearly one-third of Sao Paulo State and part of Northern Parana. It is to be extended to Pontal, Douradas and Ponta Pora and will then serve the Mato Grosso cattle country.

The rapid growth of Sao Paulo city has increased the suburban traffic of the Sorocabana from 3,500,000 passengers in 1946 to 7,500,000 in 1951. The total number of passengers carried by the whole system in 1951 exceeded 15,000,000; goods traffic amounted to 4,813,000 tons.

The project provides for 50 kg. per metre rails on 350 km. of line; 1,900 new wagons; 20 three-car units for suburban service; new locomotives; C.T.C. signalling between Ipero and Bernardino de Campos and automatic signalling on the double track between Sao Paulo and Ipero. The work will entail an expenditure of U.S. $14,904,000 for imports and 452,511,000 cruzeiros (£9,050,220) for labour and materials to be acquired locally. The works are to begin at once, without waiting for the loan to be approved.

ITALY

Higher Fares and Rates

Passenger fares were increased by 25 per cent on December 10, the only exceptions being workmen's and professional season tickets which were increased by 10 per cent. Luggage rates increased by 10 per cent.

Generally, goods rates have been increased by 10 per cent, but for a number of commodities the increase has been restricted to 5 per cent, so that the average works out at 8 per cent. Among the commodities to which the 5 per cent increase applies, provided the consignments concerned are in wagonloads of not less than 15 *tonnes* (or paying for that minimum) are fruits and vegetables, wheat, rice, maize, salt, iron ore, pyrites, cement, sulphur, blast furnace slag, marble, fireclay, coal, lignite, asphalt, and iron scrap.

FRANCE

Unloading Coal Wagons

Where coal is being unloaded on to a conveyor belt difficulty is sometimes caused by the coal coming from the wagon too rapidly. Two S.N.C.F. employees have invented a simple device to control the rate of discharge, and it has been put into use at all stations where such mechanical means of unloading is used.

It consists of two lengths of chain connected at the centre by a variable pitch link. The chain on each side of the variable link is doubled and passes through metal rings fixed to the outer wall of the wagon on each side of the wagon door. By varying the pitch of the centre link, the chain is eased, thus permitting the wagon doors to be opened to the extent desired.

Dieppe Maritime Station

The new maritime station at Dieppe, opened to traffic early last year, includes a building which extends over a section of the passenger platform and covers an area of 1,000 sq. yd. On the ground floor are rooms for the use of S.N.C.F. staff and a number of kiosks. On the first floor are the customs hall, passport rooms, S.N.F.C. booking and baggage registration offices, a currency exchange office and a tourist enquiry bureau. The two floors are linked by staircases and two goods lifts. A loudspeaker system is installed throughout and information for passengers is given out in English and French.

SWEDEN

Promoting Passenger Traffic

Acting on the report of a special committee set up in 1951 the State Railways have introduced new measures to promote passenger traffic. After examination, it has been decided to keep the organisation for passenger traffic promotion separate from that for corresponding goods traffic.

The passenger promotion organisation consists of a central office at headquarters and a "field organisation" throughout the country. The central office gives advice, co-ordinates the activities of the local agents, supplies propaganda such as posters, leaflets and films, deals with special fares rebates, and maintains contact with travel agencies in Sweden and abroad.

The "field organisation" includes agents at district headquarters and all the principal stations, with or without special railway-operated travel agency. The districts have been sub-divided into "propaganda areas" coinciding more or less with the newspaper distribution areas which are usually representative of self-contained commercial areas.

Specially interested or qualified staff will be encouraged in traffic promotion work. In this work, particular attention is being paid to schools, institutes, and important business houses and associations. A flexible fares rebate policy will encourage family and party travel.

IRELAND

Greenore Line Abandonment

The Dundalk, Newry & Greenore Railway Company has been granted a warrant by the Minister for Industry & Commerce for the formal abandonment of the railway, which was closed in December, 1951. The warrant was granted under the Abandonment of Railways Act, 1850, and in effect relieves the company of the statutory obligation to maintain fences, gates, passages, drains, watercourses, bridges and other accommodation works.

The company will sell the track and other fixed properties of the railway, and from the proceeds will pay compensation to owners and occupiers of lands adjoining the railway if it is considered that they had sustained a loss arising from the effect of the warrant of abandonment. Claims for compensation are to be lodged with British Railways before April.

British-Built Rolling Stock for Toronto Underground

Two cars to be semi-permanently coupled and made up to eight-car trains to carry 40,000 *passengers in each direction during peak hours*

THE Toronto Transportation Commission placed a contract with the Gloucester Railway Carriage & Wagon Co. Ltd. in 1952 for the construction of 104 cars for the new 4-ft. 10⅞-in. gauge Yonge Street Subway, Toronto, the first underground system in Canada. The scheme was referred to in the April 7, 1950, issue of *The Railway Gazette*.

This important contract was obtained by the firm in the face of strong competition from overseas. The British Government, it is stated, gave an assurance that, in co-operation with the builders, essential materials would be made available to enable the rolling stock to be delivered before the completion of the subway, and most of the cars have now been delivered.

Principal Dimensions

The firm has been associated for many years with the building of electric stock, particularly for London Transport, and much of the technical knowledge thereby gained has been incorporated in the design of the Toronto Subway stock. It was the original intention of the Commission to purchase somewhat shorter cars of American design similar to the P.C.C. type tramcars operated in Toronto and other North American cities.

The adaptation, however, of these vehicles for rapid transit operation in Toronto was found to be too expensive, nor was the heavier type of rolling stock in use on the New York underground system considered suitable. The principal dimensions of the new cars are as follow:—

Length over couplers	57 ft. 1½ in.
Length over body ...	54 ft. 1½ in.
Width over doors...	10 ft. 4 in.
Height	12 ft.
Bogie centres	40 ft.
Bogie wheelbase	7 ft.
Wheel diameter	2 ft. 6 in.
Door opening width	3 ft. 9 in.
Door height	6 ft. 6 in.
Seating capacity	62
Car weight (empty)	60,900 lb.

Lightweight Design

After placing the order for 104 steel cars, on the results of a preliminary study by the Aluminium Development Association, the Toronto Transportation Commission decided to investigate the economic advantages in operation of rolling stock largely of light-metal construction. A comprehensive study by the Gloucester Railway Carriage & Wagon Co. Ltd. and the Association, led to a decision by the Commission that the last four cars of the order should be built in aluminium.

To facilitate maintenance, the bogies and traction gear are identical for both steel and aluminium cars. Many components in the steel cars, such as seat frames, doors, window pans, mouldings and so on, are made in aluminium. Thus, the use of aluminium in the aluminium cars, as compared with the steel cars, is largely confined to the underframe, body-shell structure and outer sheathing. The estimated weight-saving based on preliminary design is of the order or five tons. To retain the same running characteristics as the steel cars, with this saving in weight adjustments will be made to the traction current relays of the aluminium cars to give a lower amperage at the motors on initial acceleration.

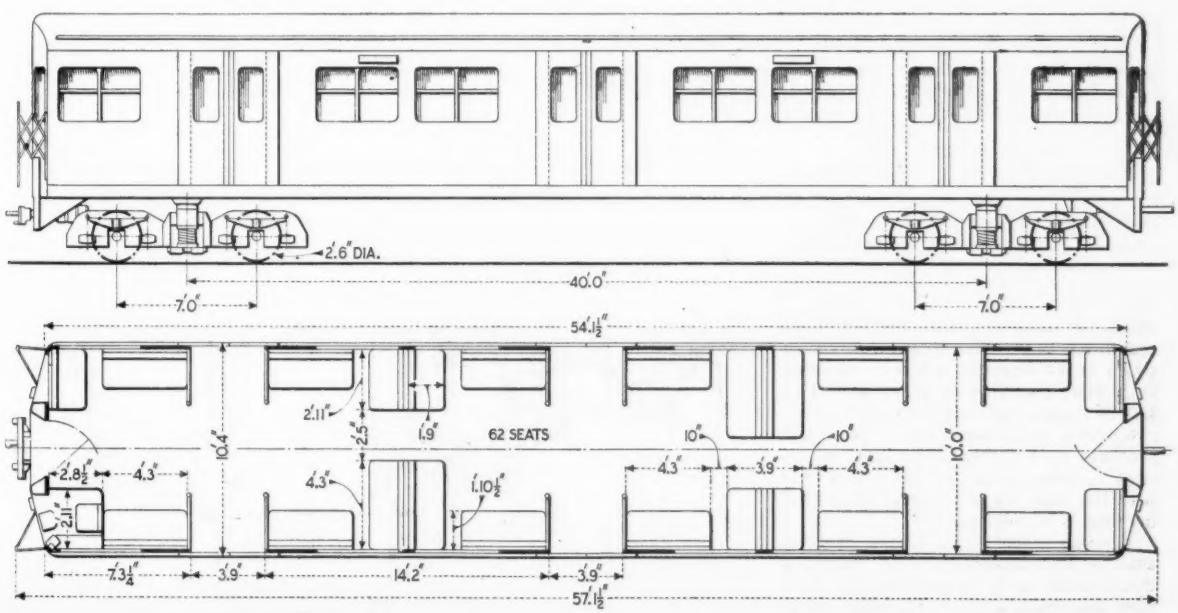
The superstructure of the steel cars comprising the underframe and body, is of integral design, and by the use of Formica plastic interior panelling and cast aluminium alloy doors and seats, the latter consisting of a combination of longitudinal and cross seats, a pleasing lightweight interior finish has been provided. Elaborate precautions have been taken against fire risk.

The cars are designed for operation as two-car units; each unit is semi-permanently coupled. As traffic increases in peak hours, additional two-car units will be added to form a maximum of eight cars in four two-car units. The eight-car trains will be capable of moving some 40,000 passengers per hour in each direction. Six power-operated double doors are provided. Station platforms 500 ft. long will accommodate the eight-car units. Maximum speed is 55 m.p.h.

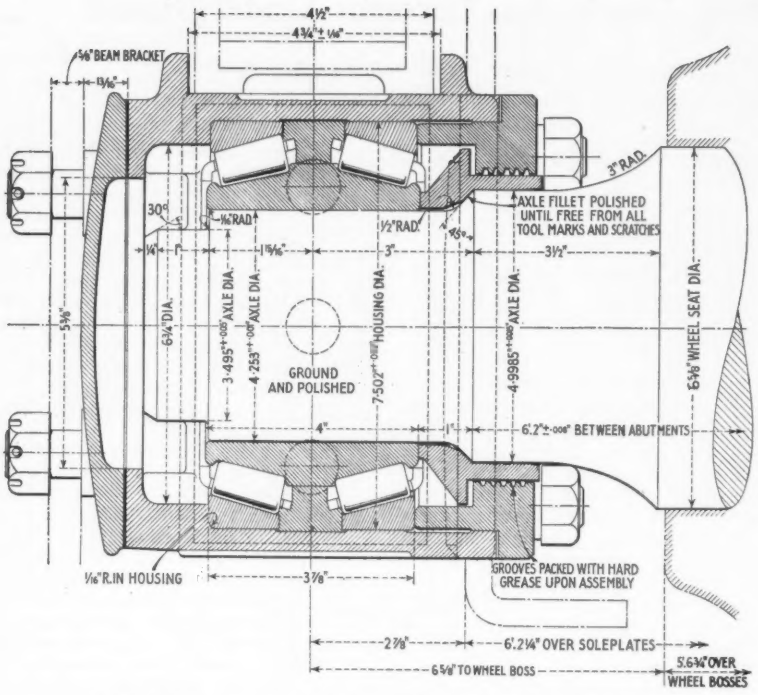
Bogie Design

The bogies are to the design of the Gloucester Railway Carriage & Wagon Co. Ltd. and are arranged to mount two propeller shafts driving motors on each bogie, with hypoid gear axle units manufactured by David Brown & Sons (Huddersfield) Ltd. The propeller shafts and flexible couplings are manufactured by Laycock Engineering Limited.

The Layrub shafts of Six-Six series construction with sliding splined ele-



Elevation and plan of the Toronto Underground rapid transit cars, showing the principal dimensions and seating layout



British Timken roller-bearing axlebox without end-thrust pad

ments are fitted between the traction motors and the final drive units. These shafts with six Layrub resilient blocks in each flexible coupling have no metal to metal contacts and therefore provide perfect insulation and improved commutation. Another feature is the employment of Layrub trunnion units between the torque reaction arm on the final drive casing and the main frame. This is a short link carrying two pairs of resilient blocks mounted side by side. Laycock-Railko fabric bearings are also fitted.

The motors are frame mounted, and consequently spring-borne, not axle-hung, as has hitherto been widespread practice with multiple-unit electric stock.

Suspension System

The suspension system is by laminated springs and triple-coil helical springs. Spring-loaded constant friction pads provide suitable damping. Each bogie has a third rail shoe on each side for current collection, also a pneumatic tripcock to effect emergency stops. British Timken roller-bearing axleboxes are fitted, each axlebox incorporates a single inner member which is provided with dual raceways together with two sets of rollers and raceways in two corresponding outer members. The rollers are held in a pressed-steel cage, acting as a retainer when the bearing is dismantled and as a spacer when the bearing is in service.

Tapered construction of the bearing enables any combination of radial or thrust loads set up in service to be dealt with anti-frictionally. The inner member is mounted on the journal by an interference fit, and located against an abutment ring which seats against the shoulder on the axle. No end thrust pad is fitted. The axlebox, a one-piece steel casting, conforms to B.S.S. 592/1950, grade "C," the axlebox back cover is also to the same specification. The outer members of the bearings are a close fit in the axlebox bore, and a cast-iron inspection plate is fitted. Liners of 11-14 per cent manganese steel are welded to the bearing surfaces.

The axlebox is designed for grease lubrication, and sealing, which is effected at the inner end of the box, consists of annular grooves in the back cover together with a baffle integral with the abutment piece. The axlebox together with the bearing can be mounted on the axle as a single unit. Tyre turning can be carried out without disturbing the bearing.

The hypoid gear axle units weigh some 10 cwt. each and are capable of transmitting a tractive effort of 2,500 lb. with a gear ratio of 7 : 52. The wheel has a pitch circle diameter of 20 in. The gearbox is designed for use in conjunction with a 68 h.p. motor. The hypoid gear and pinion, which are made from nickel-chrome case-hardened steel, are cut in Gleason machines, and, after hardening die-quenched in Gleason presses. Both gears are Parco Lubrised, the gear in its entirety and the pinion on the teeth only.

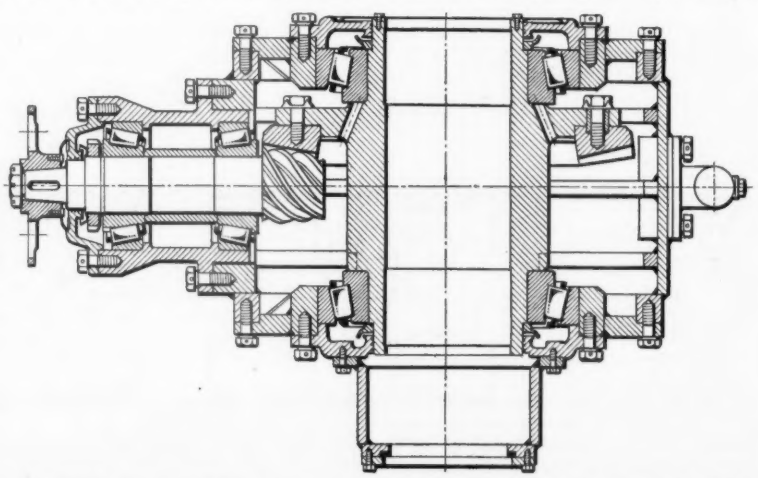
The pinion, which is forged solid with its shaft, is carried in two British Timken taper roller bearings mounted in a cast-steel housing, the bearings being accurately positioned by a steel distance piece and carefully adjusted to give the requisite pre-load for each assembly. The bearings are secured by a steel combined locknut, oil flinger and tab washer, and a cast-steel oil catcher is bolted to the pinion bearing housing.

A steel coupling flange is mounted on a taper seat of the pinion shaft, two parallel keys being fitted, each secured by castellated locknut and split ring. An oil baffle is secured to the boss of the coupling flange. The gear is secured and dowelled to a forged steel centre extended on each side to form a sleeve, and mounted on two British Timken roller bearings, which are supported in fabricated steel housings securely bolted to the main casing. With this method of construction the complete unit can be pressed direct on to the axle.

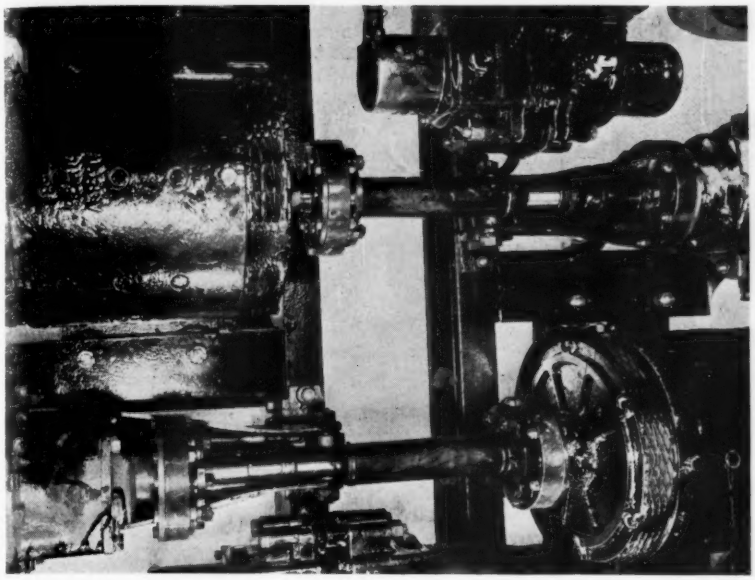
Fabricated Casing

The main casing, which forms an oil bath, is of fabricated steel construction with internal stiffening ribs, and is stress-relieved after welding, the whole being machined to close tolerances. A torque arm facing is provided and machined parallel to the pinion bearing housing facing, and at right angles to the horizontal centre line.

In assembly all bolts are tightened by means of torque spanners, the load



David Brown hypoid gear axle unit. The pinion and shaft is forged solid



The final drive showing the assembly of Layrub shafts of Six-Six series with splined elements

being 1,000 lb. in. for the $\frac{5}{8}$-in. dia. bolts, and 1,800 lb. in. for the $\frac{3}{4}$-in. dia. bolts. The axle is ground to suit the bore with an interference fit of ·008/·010 in. and provided this interference is maintained, a pressing load of 60/120 tons per sq. in. is required to press the axle into the unit.

The traction motors are supplied by Crompton Parkinson Limited and are of the usual series-wound type operating with pairs permanently in series across the 600-V. supply. Each car is fitted with four 68-h.p. motors designed to have their fields diverted for fast-running. The cars have been designed for an acceleration loaded, of 2·3 m.p.h. per sec. and a top speed of 55 m.p.h.

The traction motors have skewed slots to minimise noise, and are ventilated by their own individual fans. As is usual with this type of motor four main poles and four commutating poles are provided, and the full complement of four brush arms is included. All coils are of the fully pressed and bakelised type which enables the maximum of copper to be provided in a given space. External tapered connections, a feature favoured in Toronto, are provided.

Traction Control Equipment

The traction control equipment, manufactured by the British Thomson-Houston Co. Ltd. is type PCM and is very similar to that supplied in large quantities to London Transport.

The various items of equipment are electrically controlled and pneumatically operated, and 52-V. control power is provided by a motor-generator set floating across a lead acid battery. The master controller, of the shallow desk type and cam operated, has three power positions only, (1) shunt with all four motors and all resistance in series (2) full series, and (3) full parallel.

In the series position the starting resistances are cut out in nine steps, followed by bridge transition which reconnects the two pairs of motors with resistors across the line. The resistors are again cut out of circuit in eight steps, followed by two steps of field weakening, the latter steps being taken under current control.

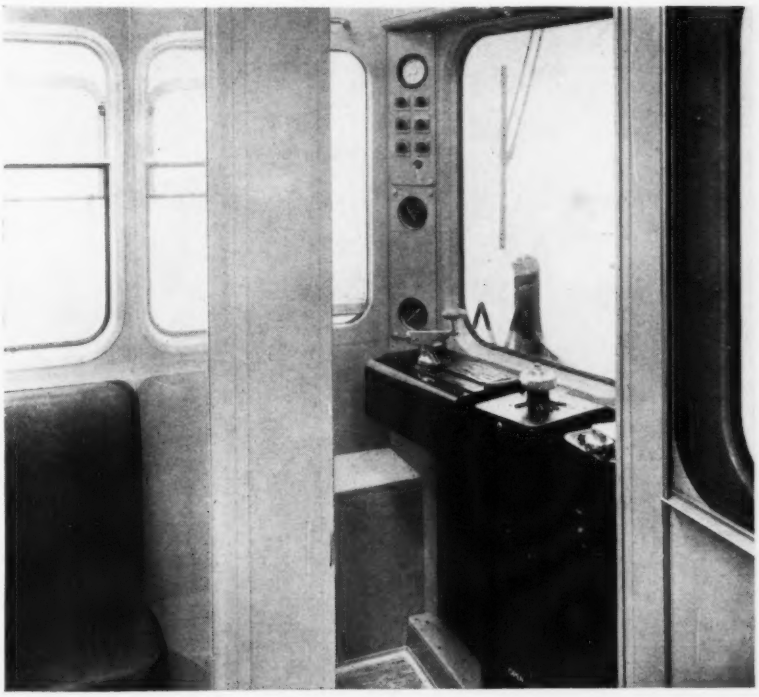
The traction control equipment is protected by a ribbon fuse and two overload relays, one in each pair of motor circuits, which open the liner breakers in the event of traction current exceeding a predetermined value. The starting resistors type RP, comprise ten units built up from edge-wire wound strip mounted on ceramic insulators. The strip is of chromium aluminium-alloy steel which has a high specific resistance and a very low temperature coefficient. The resistors are cooled by natural ventilation and are mounted adjacent to the traction control unit which necessitates only short resistance cables.

The traction control unit on all cars of a train may be tested for correct operation by depressing a push-button and operating the master control handle without having to apply power to the motors.

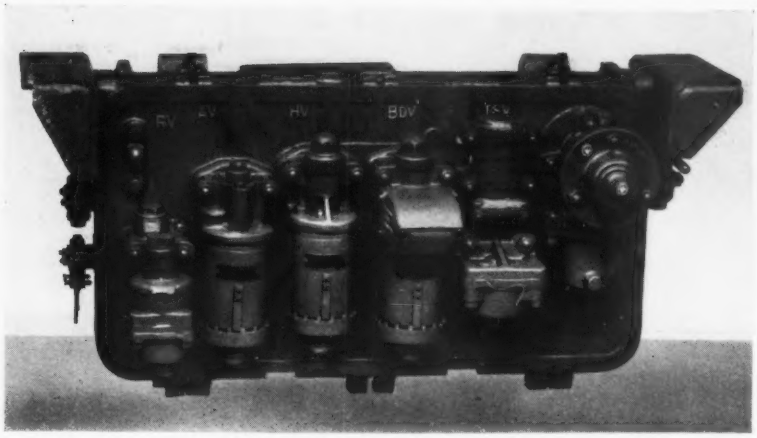
The door interlocks are series connected to a traction control relay which feeds the driver's master controller preventing a train being operated unless all doors are shut. Each pair of doors is provided with a cut out switch, mounted under a seat, which both isolates a faulty door and short circuits its associated interlocks enabling all other doors to function normally.

The D.S. shunt or driver's switch shunt, by-passes the feed to the motor generator stop and start buttons normally made by the driver's control switch. This is a precautionary measure which enables unskilled maintenance staff to switch on the motor generator set (which is required for car heating), without providing them with a control switch key, thus ensuring they are prevented from operating any cars. Above the door, from cab to saloon, are mounted two mercury retarder switches.

The Westinghouse self-lapping elec-



Interior of the driver's cab showing the master controller and indicator lights



Layout of the Westinghouse retardation control unit

tro-pneumatic brake equipment with retardation control is supplied by the Westinghouse Brake & Signal Co. Ltd. The service brake is an electrically controlled compressed air-brake (electro-pneumatic) providing simultaneous and rapid application or release on all cars irrespective of the length of train. The brake can be gradual in application or release and the driver's brake valve is self-lapping to give a brake force according to the degree of handle movement made by the driver. The driver's brake valve has five handle positions, release and running; full service, electro-pneumatic; lap; service automatic; and emergency.

The retardation control is fully automatic in operation and limits the retardation to a predetermined maximum regardless of the brake force applied, the speed at the commencement of, or during an application, and loading of the train. High initial brake forces are available without the risk of wheel slip caused by the increasing coefficient of friction between brake blocks and wheels as speed increases. Short stops can therefore be obtained, the limiting factor being the setting of the retardation controller.

The Westinghouse automatic air brake which operates by a reduction of pressure in the continuous brake pipe is added to the electro-pneumatic brake to give emergency applications made by the driver's brake valve, dead man's pedal valve, and so on, or by a signal trip stop. It also provides for graduated service application should the electro-pneumatic brake be rendered inoperative for any reason.

The automatic brake is subject to retardation control, and an independent electrical feed is taken to the controller so that it remains operative to limit the maximum retardation available in the unlikely event of the failure of electro-pneumatic brake electrical circuits. In the event of total loss of electrical supply, an unlikely contingency, the brake operates as a standard brake without retardation of control.

A Westinghouse DHC.2 motor-driven air compressor for operation, at 600 V. d.c. is fitted to each two-car unit. The motor is integral with the compressor. It is intended for normal intermittent running at a nominal speed of 1,768 r.p.m. pumping against pressures up to 140 lb./sq. in. but can be allowed to run continuously. The input when hot is approximately 8-9 kW.

The machine has two cylinders giving two stages of compression. A suction strainer for cleaning the intake air, an anti-freezer for cold weather, an inter-cooler with safety-valve between the two compression stages, and a silencer are included. One main reservoir is provided on each car, which is fitted with a safety valve to safeguard against excessive pressure. Each compressor and its associated main reservoir can be isolated. Westinghouse type Z.3 cylinders of compact design are bogie mounted to operate one cylinder per brake block, eliminating the necessity for the usual form of brake rigging.

Heating and Ventilation

The heating and ventilation equipment is supplied by J. Stone & Co. (Deptford) Ltd. and the temperature controls are supplied by the Vapour Heating Corporation of America. Equipment includes an electric air heater unit incorporating an air engine operated damper which controls admission of outside air to the heater. The heater elements are divided into three banks to obtain closer control of the car damper.

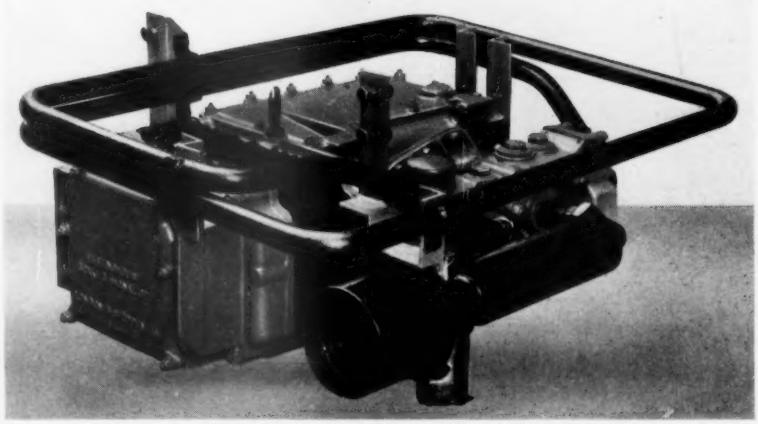
A blower fan unit, consisting of a motor providing two fans, the rotors of which are secured to the two shaft extensions of the double shaft extension motor. The fans, which are in parallel as far as the air circuit is concerned, draw the air through the heaters and distribute it to the hot air ducting to grills under the car seats.

The warm air leaving the blower unit is distributed through the end frame ducting to special outlets in the seat pillars which are arranged to discharge the air on to the floor to ensure warmth at floor level during the cold weather and also to ensure that a layer of cold air does not settle on the floor of the car.

The heater has been carefully designed to meet the special requirements of these cars in the limited space available. The tubular heater elements are of robust construction and the outer tubing is of Iconel. Although the insulation of each heater coil to its outer tube is rated to withstand 250 V. the outer tubes of groups of elements are insulated from each other and from earth so that the internal insulation of any element is not overstressed.

The elements are held in position in the heater frame by sliding supports, the pins of which are also of Iconel. The supports allow for the expansion of the elements and prevent their vibrating and allow the removal of individual elements for replacement. The terminal box for main heater connections forms part of a system which is insulated by the secondary insulation. The wires running to this box and to the over-temperature thermostat are protected by a silicone rubber hose.

Two over-temperature thermostats of the bi-metal type are incorporated in the heater unit. If the temperature of the air in the heater unit be excessive owing to the failure of the fan motor or obstruction in the duct passages the



Westinghouse type DHC.2 air compressor. The motor is integral

thermostats break contact. They provide a variation in setting of from 200 to 400° F.

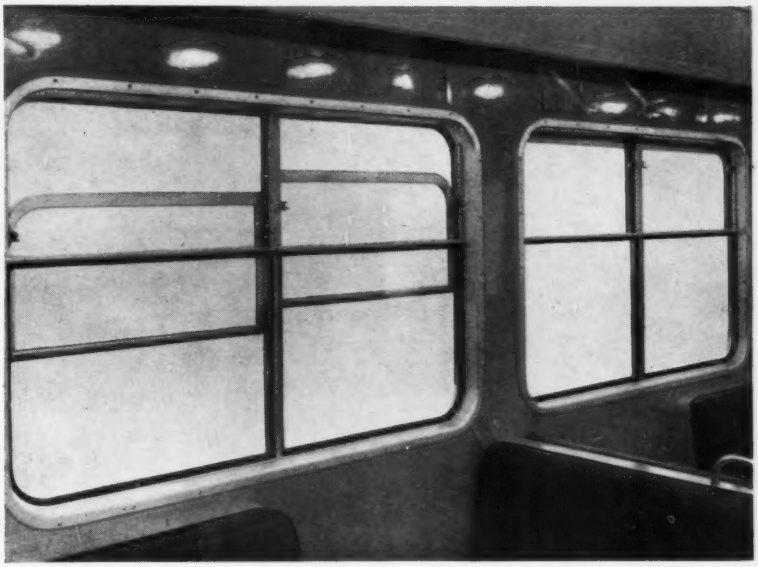
The control circuit operating the three heating contactors is de-energised, ensuring that none of the main heaters can remain on. The damper is located in front of the heater unit to control admission of outside air when preheating or under the influence of the duct thermostat. The damper is connected by a simple mechanism to a differential type air engine mounted at the end of the unit. The engine has air permanently connected to the piston rod end of the cylinder and is actuated by admitting air to, or releasing air from, the other end. The air engine piston speed is adjusted by a simple throttle valve which is fitted in the air supplied to the engine.

Electro-Pneumatic Control

The electro-pneumatic valve controls the outside air damper or cylinder and consists of an electric magnet which when energised allows air which has previously passed into the system through the valve to adjust itself to the atmosphere. Under normal conditions the valve allows an unimpeded supply of air to pass into the system. The blower is of simple and robust design and access for the maintenance of the motor is by means of removable covers on the inside of the unit. The twin fans are of multivane double entry forward curved plate centrifugal type.

The electric light fittings are also supplied by the firm and the main saloon consists of two rows of Tungsten filament 30 V. 1·6 amp. lamps arranged in two circuits for operating in series from the 600 V. d.c. supply. Each lamp is fitted in a shallow fitting of modern design incorporating a polished and anodised aluminium reflector together with a flush opal glass dish.

Alpax castings, manufactured by Lightalloys Limited, have been used extensively and include side sliding and body end doors, seat assemblies, doorway wind screens, air manifolds and so on. The side doors are a one-piece casting panelled on the inside with aluminium sheet. They are fitted with ball-bearing flat-bottomed, runner wheels and the door is guided through the door pocket between rollers secured to Alpax die-cast brackets. A steel guide is fitted to the door which secures the opening arm from the electro-pneumatically operated sliding door mechanism and is hinged for easy removal of the door.



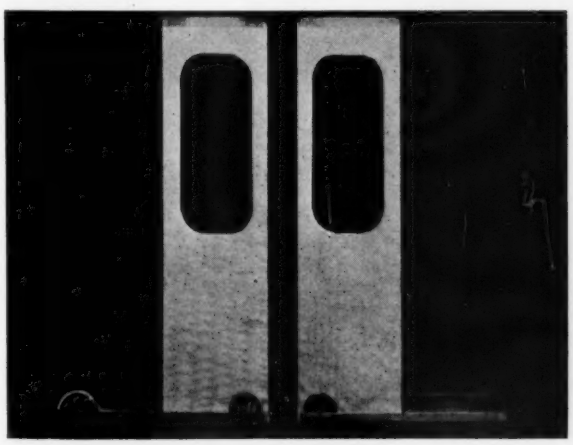
Half-drop side windows, showing the Beclatite method of securing the frame to the bodyside

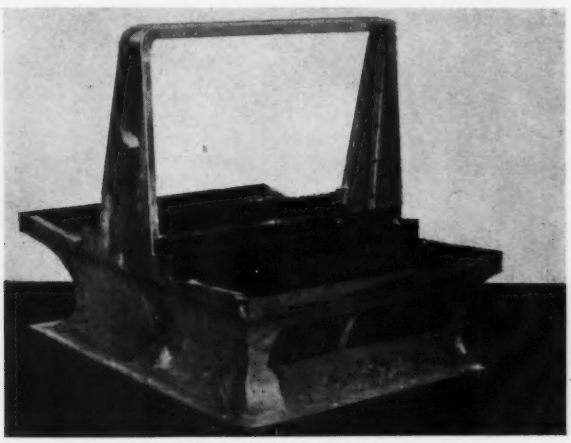
The doors are built as a unit and jig drilled for the attachment of control mechanism. Renewable bronze guides are fitted to the door top which receives the top rail. The complete unit which weighs 95 lb. is similar to those supplied to London Transport for some years. The body end doors are also one-piece castings panelled in aluminium. The doors close on rubber to make them draught proof. All door windows are arranged to accommodate rubber glazing. Pads are provided to receive locks and hinges and form part of the main casting.

The seat assemblies are built up from one-piece Alpax castings, cast to correct form and complete with top rail. The riser is formed in $\frac{1}{16}$-in. thick aluminium sheet, and the whole assembly is braced longitudinally with two steel members, on which is mounted the seat squab. The whole assembly, which weighs 67 lb., forms a very rigid structure.

Longitudinal seats are of similar construction. The partition side seat is of skeleton form and bolted back to the windscreen partition, which is an assembly made up of Alpax die castings. The whole assembly is jig drilled as a unit. The upholstery of the seats is in Vynide.

The electro-pneumatic door system supplied by G. D. Peters & Co. Ltd. is controlled by the guard. Where more than one guard is on duty, the control is divided by an automatic zoning feature, initiated by the action of the guard unlocking the door controls. The opening and closing operations are accomplished by a momentary electrical





Right and left-hand sliding doors, and (right) short double cross seat ; both are Alpax aluminium castings

Interior of the car, showing the layout of seating, electric lighting, and hinged hand grips

impulse, and the doors retained in position by a pneumatic device.

The power-operated doors in each car are electrically interlocked, and, through a relay, combine into an interlocking system for the whole train. The interlock system also feeds a traction relay, ensuring that motive power is only available when all doors are closed.

The door system is protected by a blow-off type safety valve. Lubrication for the door engines and electro-pneumatic valves is by the inclusion of mist lubricators in the pipeline.

The Peters Wedglock automatic coupler affords a remotely controlled fully-automatic coupling, combining the physical coupling of two units with the coupling of the electrical and pneumatic systems. The automatic coupler head is pneumatically-operated by a control unit, which, in addition, comprises the necessary valves and switches to set the pneumatic and electrical systems to suit the coupled or uncoupled state. The control unit is actuated pneumatically by an electro-pneumatic valve under push button control. Coupling and uncoupling is controlled from the driver's cabin. In an uncoupling operation the brakes are automatically applied.

The batteries and M.G. sets for the auxiliary supply at 50 volts are supplied by Crompton Parkinson Limited. The generator is capable of a continuous output of 4 kW., its motor being supplied from the track at a nominal 600 volts. The low voltage system provides current to the equipment controlling traction and so on.

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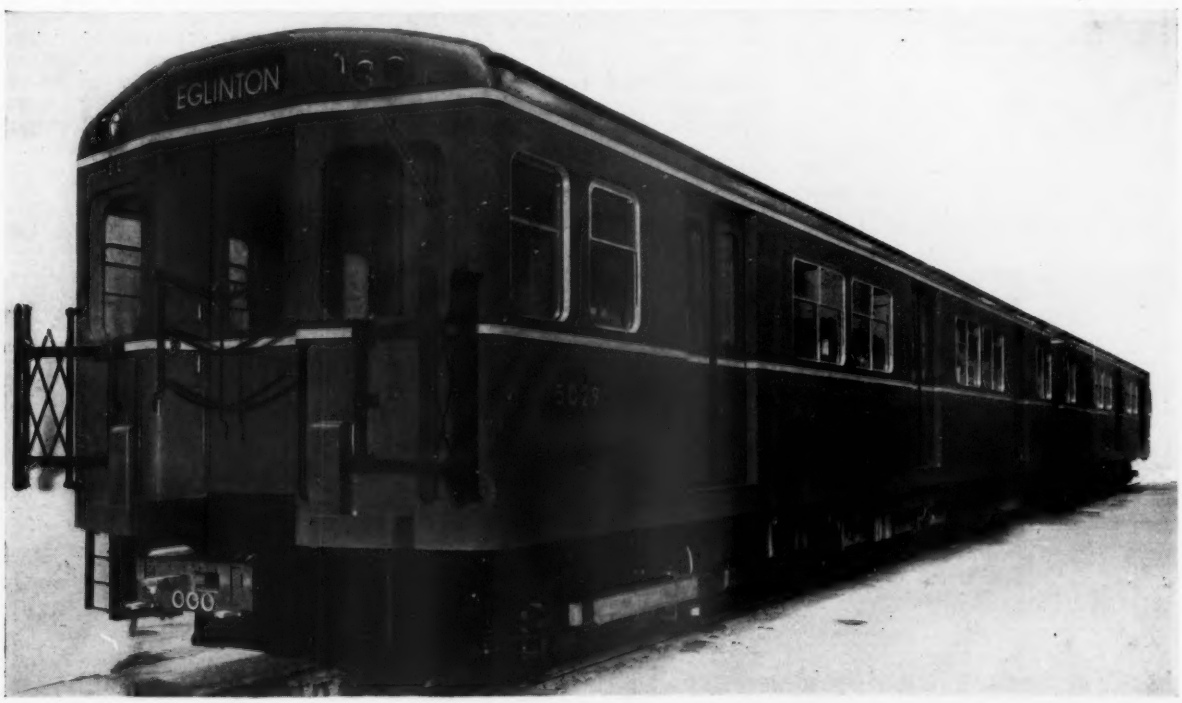
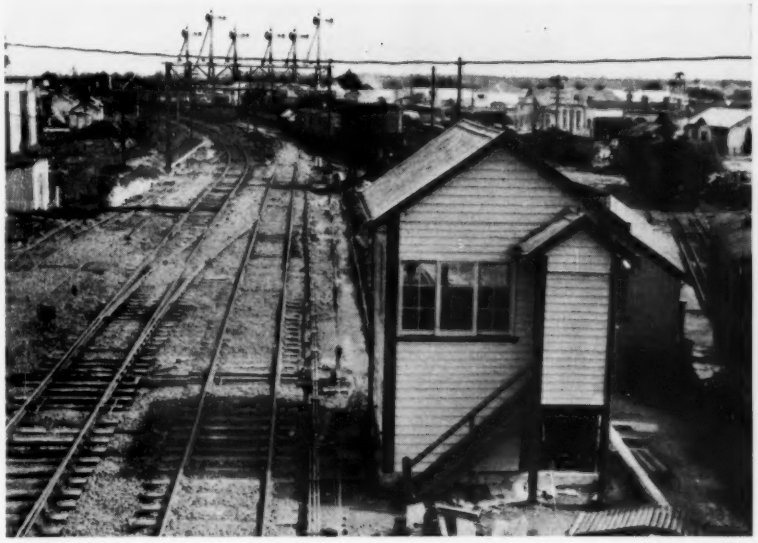


Two-car train built by the Gloucester Railway Carriage & Wagon Co. Ltd. for the Toronto Transport Commission

Yallourn-Moe Direct Line, Victorian Railways

Opening of one-way route with easy gradients facilitating coal haulage



Photo] [J. L. Buckland

Moe Yard, showing new signalbox housing auxiliary frame for working junction of new direct line from Yallourn and connections from main line to Thorpdale branch. On right is mixed gauge (broad and 2 ft. 6 in.) turntable

A 4¼-MILE direct line connecting Yallourn Marshalling Yard with Moe was opened on September 7, as another stage in the improvements being carried out by the Victorian Railways in Gippsland.

The building of the new line by the Railways Construction Branch was begun in 1949, but was delayed by shortage of labour and materials and latterly by shortage of funds. Designed as an integral part of the plan to cope with expected expansion of raw brown coal and briquette traffic from the State Electricity Commission's Yallourn North open cut and Yallourn briquette factory, the new line reduces the haul of loaded coal trains from Yallourn by approximately three miles and avoids the 1 in 50 gradients, requiring assistant engines through the Haunted Hills, via the main line and Hernes Oak.

The improvements on the main line were the subject of articles in our April 21, 1950, and June 12, 1953, issues; the works in the Yallourn district were described, with a map, in the October 19, 1951, issue.

The old route is retained for working down (empty) trains to Yallourn; thus a circular one-way traffic route for through trains to and from Yallourn new marshalling yard, adjacent to the briquette factory, is given. This yard is arranged for gravitational working of loaded wagons from the briquette factory loading points.

The Yallourn-Moe direct line is single track throughout. The maximum gradient against up (loaded) trains is 1 in 110 and 1 in 75 in the opposite direction. The sharpest curves are 20 ch. radius. Rails are 95 lb. Australian f.b. standard, welded into 135-ft. lengths with two flash-butt welds per length, laid on rolled steel sleeper plates securely spiked and anchored. Track is laid with staggered joints on curves of less than 80 ch. radius and with parallel joints on tangents and curves more than 80 ch. Hardwood hewn sleepers 9 ft. long by 5 in. by 10 in. wide are laid 61 per 135-ft. rail. The track is ballasted with 1½-in. gauge crushed bluestone to a depth of 4 in. under sleepers and under that is 6 in. of 2½-in. gauge gravel; giving a total depth of 15 in. of ballast. On the one bridge, spanning the Narracan Creek, the ballast is 1-in. gauge crushed bluestone 3 in. deep under sleepers and 8 in. total depth on a reinforced concrete trough deck.

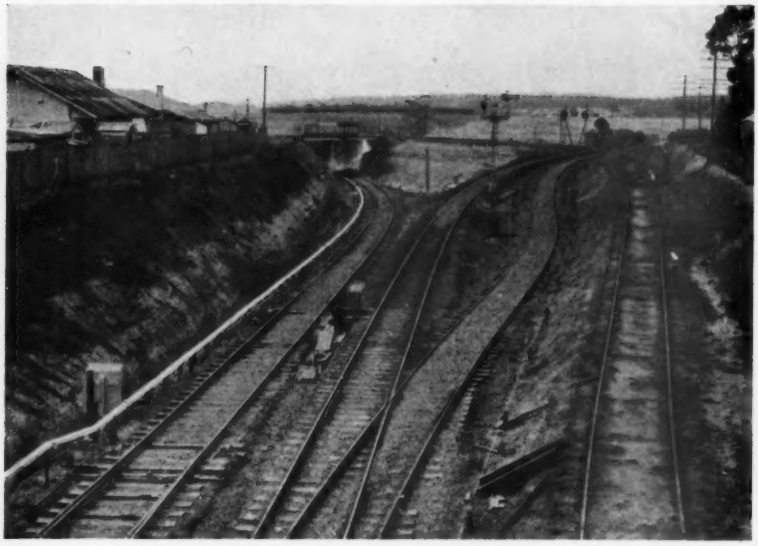
Engineering Works

There are no public level crossings; roads are carried over the railway at four places. Culverts under the main line are formed from reinforced concrete pipes, except that spanning Shady Creek near Yallourn where a 5-ft. by 3-ft. 6-in. concrete arch-type opening is used.

Apart from the bridge spanning Narracan Creek at mile 80¾, consisting of two 29-ft. 8-in. approach spans and five 30-ft. 1-in. spans of plated rolled steel beams carried on reinforced concrete abutments and piers, the only other major engineering works are some deep cuts and high fills approaching Yallourn where the route skirts the northern flank of the Haunted Hills above the Latrobe River. A substantial cutting up to a maximum of 60 ft. deep in this vicinity uncovered a hitherto unknown seam of high-quality brown coal. Some trouble caused by slips after wet weather in this area of high

Photo] [J. L. Buckland

Train of raw brown coal setting back into Yallourn marshalling yard; signal box in centre under construction will work west end of yard and junction (in foreground) to North Yallourn



Photo] [*J. L. Buckland*

View over down end of Moe Yard; new line from Yallourn on left, main Gippsland line in centre with new connection to Thorpdale branch. Old Thorpdale branch connection on right to be dismantled

rainfall is being guarded against by cutting back the edges and widening with earth-moving plant, which was extensively used on the whole project.

The line is at present restricted to one-way operation for up (loaded) traffic which is worked under the electric train staff block system with miniature instruments with a staff magazine provided for balancing purposes. At the outset there are no fixed signals at the Yallourn end of the line, although a new signalbox is being constructed at the exit from Yallourn Marshalling Yard, which will work the V-junction (trailing) from the line out North Yallourn Open Cut (known as the Brown Coal Mine line).

The connections to and from the new line at Moe are fully signalled and the down end of Moe Yard has been redesigned and provided with an auxiliary lever frame housed in a signalbox. In consequence of the redesigning and relaying of the main line, sidings, points and connections at Moe and the lowering of the track under a new bridge carrying the Princes Highway over the junction between the Gippsland main line and the Yallourn spur line, the Thorpdale branch has been given a new facing connection at a lower level. This junction is also worked from the new Moe auxiliary frame.

The new line is available to all classes of motive power with an axle-loading lighter than 19¼ tons, namely, the "X" class 2-8-2 locomotives and lighter; for the present the maximum speed is 20 m.p.h.

Concurrently with the opening of the new line, which was connected and tested on September 6, a new interim freight train timetable was brought into use from the following day providing for approximately nine through coal trains daily from Yallourn; the train loads are set at 1,500 tons for "B" class Co-Co diesel-electrics, 1,100 tons for "X" class 2-8-2s or "C" class 2-8-0s, and 780 tons for "K" (2-8-0), "N" (2-8-2) or "A" (4-6-0) class steam locomotives. These loads are all through ruling grade loads. Since the opening of the line a "B" class diesel-electric has been assigned to a daily programme of two round trips from Newport Power Station (Melbourne) to Yallourn and return with a full 1,500-ton load in the up direction. These trains are given priority where possible over all but passenger trains on the remaining single-line sections of the main line, which is being progressively doubled and regraded where necessary to provide a ruling gradient of 1 in 110 against up traffic.

Electric Operation on Main Line

This work and the associated electrification of the main line as far as Traralgon have been delayed by shortage of funds, but it is now expected that electric operation will be possible between Dandenong and Warragul (61 miles) before June 30, 1954, using the English-Electric "L" class, 2,400-h.p. main-line electric locomotives, of which 25 are on order for this purpose.

The only loaded traffic from Yallourn now normally using the old line via Hernes Oak is that consigned for industrial use at Traralgon and Sale and the Maryvale Pulp Mill of Australian Paper Manufacturers Limited; this amounts to approximately one train a day.

Most of the traffic for Maryvale Mill is handled in the firm's own 22-ton capacity welded steel four-wheel wagons, identical with V.R. standard "GY" wagons and built by A. E. Goodwin Limited, New South Wales; they are the first example in Victoria of privately-owned wagons, apart from tank wagons.

British-Built Rolling Stock for Toronto Underground

(*Concluded from page* 44)

The M.G. set consists of two similar armatures on a common shaft, surrounded by a common frame containing two independent field systems, so reducing space and weight to a minimum.

Rubber Block Suspension

By suspending the M.G. set from the underframe with rubber blocks and employing duct ventilation from inside the car, noise is greatly reduced and internal cleanliness ensured. An interesting feature is that the full output from the generator is obtained within a voltage range of 450-600 V. Output is controlled by a carbon pile regulator normally giving a constant voltage characteristic, but including a current limiting device which is operative, for example, when a full auxiliary load coincides with a discharged state of battery.

The battery has ample capacity to carry all the control loads, and also to supply emergency lighting for a time sufficient either to complete a round trip or to take a full train out of service and evacuate passengers. To reduce capital expenditure the batteries and M.G. sets have been designed so that one set is capable of supplying the requirements of two-car units.

The cars are fitted throughout with Beclawat windows supplied by Beckett, Laycock & Watkinson Limited. They all incorporate Beclatite rubber glazing, not only for retaining the glasses themselves, but also in the case of the body-side windows, for glazing the perimeter of the window frames in such a way that the edges of the body panelling are fully protected.

The bodyside windows are half drops arranged in pairs, each pair being mounted in a one unit frame. The driver's cab has a full drop weatherproof window, and all fixed windows, including destination indicator frames, are glazed with Beclatite. The window frames were subjected to a water test of 40 lb. per sq. in. The cars are finished in Dulux materials manufactured by Imperial Chemical Industries Limited. The body is painted red with cream band, the roofs are in Dulux black, and the underframe and bogies are also black finished, using an acid resisting paint and bituminous mixture respectively. Laycock-Sprague windscreen wipers are fitted, together with Laycock-Whitlay destination boards.

RAILWAY NEWS SECTION

PERSONAL

Mr. A. Max Beaton, Advertising & Publicity Superintendent of the Great Northern Railway Board, has been appointed Staff Officer to the board. The advertising and publicity organisation is being merged into the Traffic Manager's department.

Mr. D. P. Bogle has been appointed Chief Clerk to General Manager.

Mr. John Elliot, M.Inst.T., Chairman of the London Transport Executive and formerly second and last Chairman of the Railway Executive, who has received the honour of knighthood in the New Year Honours List, was born in 1898. He joined the Southern Railway in 1925 and by 1939 had become Deputy General Manager. In 1947 he was Acting General Manager and, on the nationalisation of the railways, from the beginning of the next year he became Chief Regional Officer of the newly-formed Southern Region. A year later he visited Australia on the invitation of the Victorian Government to report generally on the Victorian Government Railways. A number of the recommendations he made have been implemented with benefit to that system. In 1950 he was appointed Chief Regional Officer of the London Midland Region and in the next year he succeeded Sir Eustace Missenden to the Chairmanship of the Railway Executive. When that body ceased to exist under the terms of the Transport Act of last year, Mr. Elliot went to the London Transport, the only remaining Executive with a Chairman directly responsible to the British Transport Commission.

Mr. Ernesto Avila Quevedo has been appointed Director-General of Railways, Peru. Mr. Quevedo is a civil engineer by profession, and, for the past three years, he has been Assistant Director of Highways.

Mr. W. H. Boulay, Superintendent of Motive Power and Car Equipment, Atlantic Region, Canadian National Railway, has been appointed Superintendent of Motive Power, Atlantic Region.

The following appointments in the Freight Traffic organisation of the Canadian Pacific Railway have been announced. They took effect from January 1:—

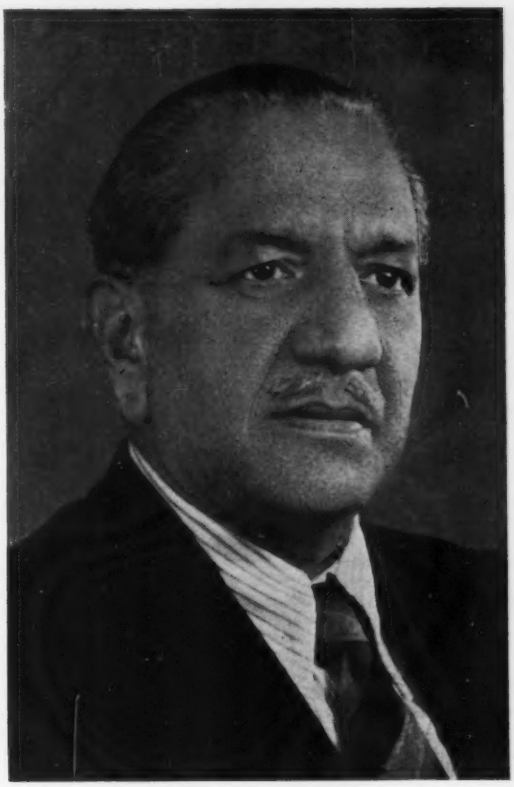
Mr. W. M. Jamieson, of Winnipeg, is promoted to be Freight Traffic Manager at Montreal. He will be succeeded as Freight Traffic Manager at Winnipeg by Mr. John Fullerton, now holding a similar post at Toronto. Mr. F. K. Hollyman of Montreal will move to Toronto as Freight Traffic Manager and will be succeeded as Assistant General Freight Traffic Manager at Montreal by Mr. T. Hooks of Vancouver. Mr. V. R. Duncan of Vancouver, at present General Freight Agent there, will succeed Mr. Hooks as Assistant Freight Traffic Manager.

Mr. E. R. Williams, M.B.E., Assistant General Agent, British Railways, Paris, has been appointed District Passenger Superintendent, Sheffield, British Railways, Eastern Region.

Mr. Anise Ahmed, Controller of Stores, Central Railway, who proceeded on retirement leave on December 23, was educated at the Thomason Civil Engineering College, Roorkee. He joined the North Western Railway as an Apprentice Engineer in 1922, but he served his apprenticeship and probation on the Central Indian Coal Fields Railway Survey & Construction. He was subsequently appointed to the Indian Railway Service of Engineers and posted to the East Indian Railway, on which he held several assignments as Assistant Executive Engineer in charge of Open Line Civil Engineering Sub-Divisions. In 1934, Mr. Anise Ahmed's services were transferred to the Great Indian Peninsula Railway, on which he held several Sub-Divisional and Divisional charges of the Engineering Department. In 1944, he was drafted to the Stores Department, in which he held District and Junior administrative charges. He was appointed Deputy General Manager (Works) in 1947, and confirmed in that position in a tenure capacity. He was subsequently appointed as Controller of Stores of the Great Indian Peninsula Railway, now the Central Railway, the position he held up to the time of his procedure on retirement leave.

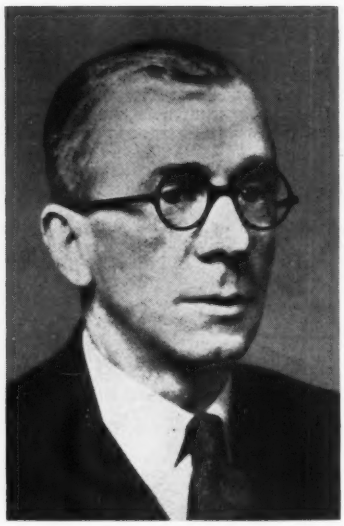
Mr. John Elliot

Chairman, London Transport Executive, who receives a Knighthood



Mr. Anise Ahmed

Controller of Stores, Central Railway, India, who is retiring



Mr. K. S. Robertson

Assistant Carriage & Wagon Engineer, E. & N.E. Regions, March, 1953—December, 1953

Mr. E. G. Horton

District Engineer, London, L.M. Region, 1950-53

Mr. J. L. Meadowcroft

Area Superintendent, Eastern Region, Hotels Executive, 1949-53

Mr. K. S. Robertson, M.I.Mech.E., Assistant Carriage & Wagon Engineer, Eastern & North Eastern Regions, Doncaster, British Railways, who retired on December 31 after 43 years of service, was a pupil of Robert Gordon's Technical College, Aberdeen. He served his apprenticeship in the Inverurie Locomotive Works of the former Great North of Scotland Railway, and, on completion of his apprenticeship in 1912, he left the railways to take up engagements in Sweden and the Malay States on various engineering projects. He returned home in December, 1914, and enlisted. Invalided out of the Forces, he returned to railway service at Inverurie, being subsequently appointed Works Manager of the Locomotive, Carriage and Wagon Departments. In July, 1924, he was transferred to the L.N.E.R. Works at York as Assistant Carriage & Wagon Works Manager. In May, 1928, he was appointed Carriage & Wagon Works Manager, Stratford, London, and, in August, 1937, he was promoted to the post of Assistant Mechanical Engineer, Gorton and Dunkinfield Locomotive, Carriage & Wagon Works. In June, 1941, he was appointed to a similar position at Cowlairs, Glasgow. Mr. Robertson was appointed Outdoor Carriage & Wagon Assistant to the Chief Mechanical Engineer, Doncaster, in May, 1942. Following nationalisation of the railways, this post was re-designated Assistant Outdoor Carriage & Wagon Superintendent, Eastern & Northern Eastern Regions. In March, 1953, Mr. Robertson became Assistant Carriage & Wagon Engineer, Eastern & North Eastern Regions. At a recent ceremony at Doncaster, Mr. Robertson was presented with a silver tea service and portable typewriter from the officers and staff of his department. Several officers of other Departments and Regions were associated in the presentation.

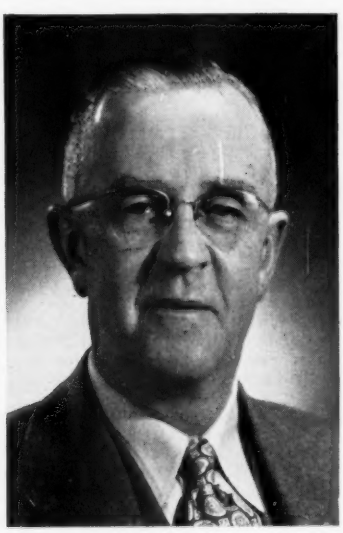
Mr. Ernest G. Horton, B.Sc., M.Inst.C.E., District Engineer, London District, London Midland Region, who retired on December 31, after 42 years of service, was educated at St. Albans School and University College, Nottingham. He began his railway career with the Midland Railway in 1911 as a pupil to the Chief Engineer and became Assistant to the Western Divisional Engineer in 1914. Following service in France during the 1914-18 war, Mr. Horton was engaged on developments at Washwood Heath, Birmingham, King's Norton and Redditch. After Parliamentary and constructional work in connection with the Mid-Notts Joint Line, he became Assistant District Engineer at Northampton in 1929 and District Engineer in 1933. Mr. Horton left Northampton in 1945 to become District Engineer, Watford, and, on the reorganisation of the London district in 1950, he became the District Engineer, London, with headquarters at St. Pancras. In this

Mr. R. C. Flowerdew

District Passenger Superintendent, Manchester, L.M. Region, 1947-53

Lt.-Colonel H. S. Cole

Chief of Police, Northern Area, British Transport Commission, 1948-53



Mr. H. C. T. Boyd

Appointed Assistant Chief of Research, Canadian National Railways

capacity his staff numbered some 2,000 and, in addition to approximately 800 miles of track, he was responsible for engineering work at the London Midland's three London termini, Euston, St. Pancras, and Broad Street. During the recent modernisation work at Euston he carried out the reconstruction of connections to arrival platforms and the new signalbox.

Mr. J. L. Meadowcroft, Area Superintendent, Eastern Region, Hotels & Catering Services, British Transport Commission, who retired at the end of last year, had over 50 years of railway service to his credit. Mr. Meadowcroft entered the service of the Great Eastern Railway in the Hotels Department at Liverpool Street Hotel in March, 1903, after "ground-floor" training in the industry. In 1912, he was appointed as Assistant to the Manager of the Parkeston Quay Hotel, Essex, and, during the 1914-18 war, he served in the Middlesex Regiment and later in the Railway Operating Corps. On demobilisation in 1919, he became Assistant Banqueting Manager at the Abercorn Rooms, Liverpool Street Hotel, and, a year later, he was transferred to the Marine Department as Assistant Shore Purser. He remained in Harwich as Manager of the Parkeston Quay Hotel for ten years until his appointment in 1934 as District Hotels Manager, Grimsby. In 1936, he moved to Sheffield as Manager of the Royal Victoria Hotel; in 1938, he was appointed Restaurant Cars Superintendent at Kings Cross (Great Northern Section); and he became Assistant Hotels Superintendent of the L.N.E.R. (Southern Area) in 1942. He moved north to York in 1945 to be Hotels Superintendent of the North Eastern Area L.N.E.R.; on the nationalisation of the railways he was designated N.E. Region Hotels Superintendent; and, in 1949, when the Hotels Executive was formed, he became Area Superintendent, Eastern Area, Hotels Executive. Mr. Meadowcroft has for the past two years been a member of the Catering Wages Board. He was also, at the time of his retirement, a member of the Council of the British Hotels & Restaurants Association, and was for eight years the hotels and catering representative on the Yorkshire Council for Further Education. On December 22, at the Royal Station Hotel, York, Mr. Meadowcroft was presented with a walnut book-case and bureau by Mr. H. A. Short, Chief Regional Manager, North Eastern Region of British Railways, on behalf of North Eastern Region Officers.

Mr. R. C. Flowerdew, M.B.E., District Passenger Superintendent, Manchester, London Midland Region, who retired on December 31 after 50 years of service, entered the service of the London & North Western Railway in 1903 as a Traffic Apprentice at Stockport. In 1907 he went to the District Superintendent's Office at Manchester Exchange. He joined H.M. Forces in 1916 and served with the Royal Engineers (Transportation) in France and Flanders, returning to the District Superintendent's Office, Manchester, in 1919. In 1924 he was appointed to the Divisional Control Office at Crewe, and, two years later, he took charge of traffic into and out of London Road Station, Manchester. Mr. Flowerdew successively occupied the position of Assistant Divisional Controller at Patricroft (1928), Liverpool (Lime Street) (1930), and Chester (1932) until his appointment in 1933 to the office of the Chief Commercial Manager, Euston, to take charge of a new section formed to arrange passenger train services on the L.M.S. south of Carlisle. A year later he went to Sheffield as Passenger Assistant to the District Goods & Passenger Manager. On January 1, 1936, Mr. Flowerdew took up the position of Stationmaster at Preston and in 1938 he was appointed Operating Instructor to the School of Transport, Derby. On the outbreak of war he was appointed an extra assistant to the Divisional Superintendent of Operation, Derby, and, in January 1940, at the age of 52, he volunteered for the Royal Engineers, was accepted and released in June, 1945, with the rank of Major. He was responsible for the training of operating and locomotive staff for the operation of military railways overseas and military railway depots in this country. He was awarded the M.B.E. (Military Division) in the Birthday Honours List of 1946. On October 1, 1945, Mr. Flowerdew was appointed District Passenger Manager, Leeds, and, in 1947, he took up the position at Manchester he now vacates; the post was re-designated District Passenger Superintendent in 1950. He has been a member of Manchester Chamber of Commerce, a member (representing the railways) of the North West Transport Users Consultative Committee, and he has served on Joint Committees with the Ribble Motor Services Limited, North Western Road Car Co. Ltd., Lancashire United Transport and Todmorden Joint Omnibus Committee, of which he was Deputy Chairman. He was, in addition, Railway Liaison Officer for Town Planning in the North West.

Lt.-Colonel H. S. Cole, Chief of Police, Northern Area, British Transport Commission, who has retired, has served nearly 45 years with the North Eastern Railway, the London & North Eastern Railway, and the British Transport Commission. His responsibilities covered the counties of Westmorland, Cumberland, Durham, Northumberland and Yorkshire. Lt.-Colonel Cole was educated at King's College School, London University. He qualified for the Army in June, 1907, but for domestic reasons had to give up the Army as a career. Later he joined the North Eastern Railway as a Traffic Apprentice at York. With the outbreak of the 1914-18 war, he was commissioned to the unattached list and seconded to the 1st Kitchener Battalion then about to be raised by the North Eastern Railway for the Northumberland Fusiliers. He served throughout the war with that battalion attaining the rank of major, was mentioned in despatches, with the honour of laying up the colours of the battalion in St. Nicholas Cathedral at Newcastle-upon-Tyne on the return of the cadre to this country. Shortly afterwards, when the question of the formation of a supplementary reserve was envisaged, Colonel Cole was nominated to assist with the formation of the No. 1 Dock Group and Dock Company with the rank of Major in command of the Company, and combined these duties with the holding of various traffic appointments with the railway company. In 1926, when Traffic Agent at Newcastle-upon-Tyne, he was selected Overseas Representative in Australasia for the London & North Eastern Railway Company. A luncheon to mark the occasion was arranged by the Lord Mayor of Newcastle, and was attended by the Chairman of the L.N.E.R. On his return to this country Colonel Cole was appointed to take charge of the docks at Hull. In 1934, Lt.-Colonel Cole was appointed Chief of Police, North Eastern and Scottish Areas, L.N.E.R., and, at the same time, he assumed command of the No. 1 Docks Group, and was also appointed Director of Docks. In 1936, when war appeared likely, Lt.-Colonel Cole undertook the preparation in Civil Defence of the North Eastern and Scottish Areas. Over the ensuing years between 1936 and 1945 the training of some 20,000 railwaymen and women together with the provision of their equipment was undertaken. In the North Eastern Area this involved the setting up of 91 major schemes, covering both the railway services inland and the docks, with a proportionate organisation for Scotland. The manning of these schemes both in England and Scotland involved a monthly exercise of some 8,000 railway employees in England and 6,000 in Scotland. All forms of Civil Defence were covered, and for the North Eastern Area Lt.-Colonel Cole was also appointed as Fire Master. After nationalisation a separate Chief of Police was appointed for the Scottish Forces, and Colonel Cole's Area was correspondingly enlarged to cover the five Northern Counties as at present, taking in a whole division of the former London Midland & Scottish Railway and parts of divisions from other areas. Lt.-Colonel Cole has been a member of the No. 2 District of Chief Constables of England and Wales since 1934.

Mr. H. C. T. Boyd, M.A., A.M.I.C.E., Assistant Engineer in the Research & Development Department, Canadian National Railways, who has been appointed Assistant Chief of Research, was born of Scottish parents on the Island of Penang off the Malay coast. He was educated at Charterhouse and the University of Cambridge, from where he graduated in 1927. After graduation, he served as engineer on a hydro-electric development in Scotland. He came to Canada in 1929, and, after working in private business and with various engineering firms, he went to India in 1936, where he served with the Military Engineering Services. Mr. Boyd returned to Canada in 1939 and was engaged in the construction of defence projects until 1944, when he joined the C.N.R. as Assistant Engineer in the Research & Development Department. He is a member of the Engineering Institute of Canada.

We regret to record the death, at the age of 91, of Mr. H. H. Woodgate, a pioneer of Argentine Railways.

Lord Bennet of Edgbaston, C.B.E., having completed a year in office as Chairman of the British Productivity Council, has been succeeded by Mr. Tom Williamson, C.B.E. Lord Bennet will remain a member of the Council. Sir Lincoln Evans, C.B.E., who earlier this year was appointed Vice-Chairman of the Iron and Steel Board, has been succeeded as Deputy Chairman by Sir Ewart Smith.

Mr. J. C. Wood, O.B.E., Director and Commercial Manager, John Fowler & Co. (Leeds) Ltd., who retired from active business on December 31 after serving the company for almost 52 years, retains his position on the board of directors, and he will attend board meetings in an advisory capacity.

Mond Nickel Fellowships, 1953

The Mond Nickel Fellowships Committee announces the following awards for 1953:—

Mr. J. E. Benson, Metropolitan-Vickers Electrical Co. Ltd., Manchester, to study the technique and interpretation of results of non-destructive testing of metal components in the United Kingdom, on the Continent and in the U.S.A. and Canada.

Mr. K. Blackburn, Dorman, Long & Co. Ltd., Redcar, to study hot-metal basic open-hearth practice in Great Britain, on the Continent and in the U.S.A. and

Canada, with particular reference to mixer furnace operation, refractories, instrumentation and pitside practice.

Mr. N. B. Pratt, Broken Hill Proprietary Co. Ltd., Newcastle, N.S.W., to study the technical and economic aspects of recent advances in the erection and operation of integrated iron and steelworks in Great Britain, on the Continent and in the U.S.A. and Canada.

Mr. H. Davies, General Manager of W. G. Bagnall Limited since 1947, has been appointed a Director of the company.

We regret to record the death, on December 14, of Mr. J. Hogan, until recently Export Sales Adviser to British Insulated Callender's Cables Limited.

We regret to record the death, at the age of 62, of Mr. E. Harrison, Manager of the Cleveland by-products works of Dorman, Long & Co. Ltd.

We regret to record the death, on December 28, at the age of 55, of Mr. C. F. Cogswell, A.C.A., Secretary of Philips Electrical Limited.

Sir Archibald J. Boyd, who recently retired from the Managing Directorship of Metropolitan-Cammell Carriage & Wagon Co. Ltd., has been elected a Director of Cammell Laird & Co. Ltd.

Mr. Aubrey Jones, M.P., has been elected Economic Director of the British Iron & Steel Federation.

Mr. E. S. Waddington of Philips Electrical Limited, Industrial Products Department, has been re-elected Vice-Chairman of the Arc Welding Plant Section of British Electrical & Allied Manufacturers' Association.

Mr. A. J. Turner, Secretary of Thos. Cook & Son, Ltd., has been appointed Assistant General Manager (Administration) of the company, with effect from January 1. Mr. Turner is succeeded as Secretary by Mr. D. E. Meek, his Assistant.

Mr. Philip Jones has been appointed to the new position of Press & Publicity Officer of the Exports Credits Guarantee Department. This address is 9, Clements Lane, London, E.C.4. (Telephone: Mansion House 8771.)

Mr. S. O. Gillingham, Deputy Manager of the Cape Town depot of Leyland Albion (Africa) Ltd., has been appointed Resident Representative of the company in the Cape Midland and Border areas. He will operate from Port Elizabeth, and will direct the operations of the Leyland Albion mobile workshop which was established there three months ago to augment field service facilities.

Sir Harry Brown, C.M.G., M.B.E., M.I.E.E., who in 1940 joined the British General Electric Co. Pty. Ltd. of Australia as Chairman & Joint Managing Director and later held the position of full-time Chairman, has resigned at the age of 75. His resignation took effect at the end of December. Mr. T. E. Morgan, at present Managing Director of the British General Electric Co. Pty. Ltd., has been elected Chairman & Managing Director of the Australian company. Mr. A. T. Bridge, Mr. R. J. Darton and Mr. C. Drabble have been elected Directors.

As from January 1, Mr. E. O. Measor, A.C.G.I, B.Sc., M.I.C.E., and Mr. H. Grace, M.Sc., MI.C.E., partners in the firm of Scott & Wilson, have joined, as partners, Mr. R. W. Hawkey, M.A., M.I.C.E., M.I.W.E., the sole partner of the firm of Sir Cyril Kirkpatrick & Partners. Henceforth the practices will be continued under the title of Scott & Wilson, Kirkpatrick & Partners. Also on January 1, Mr. F. M. Bowen, M.I.C.E., A.M.I.Struct.E., was taken into partnership. From Monday, February 15, the address of the firm will be 47, Victoria Street, London, S.W.1.

The New Year Honours List

The following is a selection of honours of transport and industrial interest from the New Year list :—

Viscount

The Rt. Hon. Frederick James, Baron Leathers, C.H., Secretary of State for the Co-ordination of Transport, Fuel & Power, 1951-53, and Minister of War Transport, 1941-45.

Baron

The Rt. Hon. Leslie Hore-Belisha, Minister of Transport, 1934-37.

Baronets

Lt.-Commander Joseph Gurney Braithwaite, R.N.V.R. (Retd.), M.P., Parliamentary Secretary, Ministry of Transport, 1951-53.

Colonel Sir Joseph Nall, D.S.O., J.P., M.P., Member and a Past President of the Institute of Transport, Member of Council and a Past Chairman of the Public Transport Association. He was Chairman & Managing Director of the family firm of Joseph Nall & Company, carriers and L.M.S.R. cartage agents, which was vested in the British Transport Commission on the nationalisation of railways.

K.C.B.

Sir James Helmore, K.C.M.G., Permanent Secretary, Ministry of Supply.

Knights Bachelor

Mr. John Elliot, formerly Chairman of the Railway Executive and now Chairman of the London Transport Executive.

Mr. Ernest Harry Lever, Chairman & Chief Executive, Steel Company of Wales Limited.

Mr. John Owen Sanders, C.M.G., General Manager, Malayan Railway, and formerly Member for Railways & Ports, Federation of Malaya.

C.B.

Brigadier Richard Gardiner, C.B.E., formerly Commandant, Transportation Training Centre, R.E., and now Representative (Designate) in Peru, Peruvian Corporation Limited.

C.M.G.

Mr. William Venner, General Manager, Sierra Leone Railway.

C.B.E.

Mr. St. John de Holt Elstub, Director of Metal Division, Imperial Chemical Industries Limited.

Mr. Reginald Duncan Gwyther, M.C., Senior Partner, Coode & Partners, Consulting Civil Engineers, London.

Mr. George Lyttelton Laurenson, retiring Commissioner of Transport, New Zealand.

Mr. James Maxwell, General Manager, Thos. Cook & Son Ltd.

Captain George Villar, R.N. (Retd.), General Manager, Southampton, and Director, John I. Thornycroft & Co. Ltd.

O.B.E.

Mr. John Harold Baldwin, Chief Accountant, East African Railways & Harbours.

Mr. Cuthbert Geoffrey Blackford, Principal Executive Officer, Railway Liaison Staff, British Army of the Rhine, War Office.

Mr. John Gourlay Bridges, M.B.E., Director-General, British Travel & Holidays Association.

Mr. Archibald Davidson Mason Brown, Chief Engineer, Iraqi State Railways.

Mr. John Holden Fraser, Chief Officer (Signal & Telecommunications), British Transport Commission.

Mr. Ernest Hira Greet, Senior Engineer, Civil Engineering Department, Office of the Crown Agents for the Colonies.

Mr. William Langford, Manager for France of the Associated British Machine Tool Makers Limited.

Mr. Thomas Brisbane Meikle, Scottish Regional Secretary, Transport & General Workers' Union.

Mr. Frank Victor Mills, Chief Executive Officer, Ministry of Transport & Civil Aviation.

Mr. William Calliope Muirhead, Special Director, English Steel Corporation Limited, Sheffield.

Mr. Alexander Creffield Riddelsdell, Chief Executive Officer, Ministry of Transport & Civil Aviation.

Mr. Albert Eric Vere Robbins, Chief Executive Officer, Ministry of Transport & Civil Aviation.

Captain Eldon Bruce Serjeant, Master, R.M.S. *Duke of Lancaster*, British Transport Commission.

Mr. Herbert Frederick Henry Shields, Managing & Technical Director, British Ropeway Engineering Co. Ltd.

Mr. Ernest Robert Spragg, Member, Licensing Authority for Public Service Vehicles, Eastern Traffic Area.

M.B.E.

Mr. Leslie Thornley Dawes, Commercial Manager, Secretary and Director, Beyer, Peacock & Co. Ltd.

Mr. Ernest Herman Edwards, Managing Clerk, British Transport Commission.

Mr. Herbert Francis William Golding, Chief Inspector, Northern Aluminium Co. Ltd.

Mr. Denis John Horan, formerly Chief Draughtsman, Sudan Railways.

Mr. Alfred Proom Humble, Resident Engineer, Port Development Works, Ceylon.

Mr. Harold I'Anson, Higher Executive Officer, Northern Traffic Area, Ministry of Transport & Civil Aviation.

Mr. James Killin, District Traffic Superintendent, Perth, British Transport Commission, Scottish Region.

Mr. Horace Le Fevre, Higher Executive Officer, Ministry of Transport & Civil Aviation.

Mr. Wijesinghe Aratchige Bertram Arthur Eric Perera, Divisional Transportation Superintendent, Ceylon Government Railway.

Mr. Edward John Redmond, Executive Officer, Ministry of Transport & Civil Aviation.

Mr. Alfred Eber Vincent, Divisional Officer, No. 6 Division (West South Wales), Iron & Steel Trades Confederation.

Mr. Rienzie Alexander Wijeyekoon, Assistant Secretary, Ministry of Transport & Works, Ceylon.

Mr. Everard Clarence Wijeyesekera, Chief Engineer, Way & Works, Ceylon Government Railway.

New Garage for London Transport

Covered accommodation for 137 *buses : equipment for routine maintenance*

The new London Transport Central Area garage at Loughton came into operation recently. It provides accommodation for 137 buses and is equipped to handle both their routine maintenance and heavy dock work. As the parent of a pair of garages, Loughton is also to deal with the heavy dock work required for buses from Leyton Garage. In layout the new structure follows the broad principles of London Transport's post-war garage design with the accommodation provided falling into three main groups; parking area; dock unit, and operating offices and canteen block. The parking area of 49,500 sq. ft., contains five pits for routine maintenance, as well as three servicing bays where buses coming out of service are re-fuelled, re-oiled, vacuum-cleaned and automatically washed.

The dock unit which has no columns, gives an unrestricted floor space of 31,000 sq. ft. The equipment includes high-pressure plant for steam-cleaning chassis, ten inspection pits and all ancillary stores and workshops. Services provided include vacuum-cleaning and compressed air points and a fume exhaust plant to prevent contamination of air.

Details of Construction

Both parking and dock areas have roofs of welded steel trusses, with steel deck covering. Portal trusses are used to form monitors to supplement the natural light provided by the vertical patent glazing to the perimeter of these areas. The brick walls are completely divorced from the steel structure to allow for movement in the steel.

The floor of the dock unit is totally suspended and that of the parking area is on mass concrete, at places 6-ft. deep. The office and canteen block is a steel-framed structure with reinforced concrete floors and flat roof, and contains a ground-floor entrance hall which serves for the display of notices, duty rosters, and so on, gives access to the conductors' room and traffic offices. On the first floor are a staff canteen and recreation room.

The architects were Messrs. F. R. S. Yorke, E. Rosenberg, and C. S. Mardall.

The following is a list of sub-contractors and suppliers of materials:—

Power's & Dean, Ransome's Limited	Structural steelwork
Mather & Platt Limited ...	Fire-resisting floors. Sprinklers.
William Briggs & Sons Ltd....	Roof coverings.
Ruberoid Co. Ltd.	Steel deck and coverings.
G. W. King Limited ...	Sliding doors.
Williams & Williams Limited	Steel screens, steel doors, Aluminex windows.
British Vacuum Cleaner Co. Ltd.	Vacuum services.
Richard Thomas & Baldwin Limited	Storage tanks.
Richard Crittall & Co. Ltd....	Heating ventilation.
Thomas Parsons & Sons Ltd.	Paints and distempers.
Benham & Sons Ltd. ...	Kitchen equipment.
Clarke, Nicholls & Marcel ...	Structural Engineers.
Oscar Faber & Partners ...	Heating and electrical consultants.
Cyril Sweett & Partners ...	Quantity surveyors
Gee, Walker & Slater ...	Main Contractor

B.T.C. New Advertising Organisation

On January 1 the British Transport Commission introduced a new organisation for handling advertisement spaces on the Commission's properties and vehicles throughout the country. From that date the Commission took over the sale of spaces and the posting and maintenance commitment in the London Midland and Scottish Regions of British Railways which had been previously handled by contractors. The Commercial Advertisement Division of the Department of the Chief Public Relations & Publicity Officer (Mr. J. H. Brebner) is now responsible, with the exception of the Mersey Railway Company and certain small contracts, for commercial advertising space on all British Transport stations, roadside sites and other properties, in trains and on buses and vans, and in publications such as timetables and the British Railways holiday guides.

The takeover has involved widespread changes in the organisation of the Division, designed to give advertisers and their agents on-the-spot service.

The country has been divided into 11 new areas centred on London, Edinburgh, Manchester, Bristol, Newcastle, Leeds, Nottingham, Birmingham, Southampton, Cardiff and Bedford. Each is in the charge of a senior official of the Commercial Advertisement Division who, with his area staff, is fully equipped to deal with all enquiries for space on any form of the Commission's media.

Location of Area Offices

The location of area offices generally coincides with large railway centres, with their corresponding network of suburban lines, and with the areas served by the bus companies operated by the Commission.

New offices are being opened at Leeds, to provide facilities for advertisers and their agents in this important industrial neighbourhood and at Bedford, which will be of particular service to clients wishing to advertise on the large bus undertakings operating in the surrounding districts. There will also be a sub-office of the Bristol area at Exeter.

Appointments already confirmed in the new organisation are :—London, Head of Sales: Mr. R. F. Dyer; Edinburgh, Advertisement Manager (Scotland): Mr. T. Steel; Manchester, Area Sales Manager: Mr. J. Walker; Newcastle, Senior Area Representative: Mr. R. Charlton; Nottingham, Senior Area Representative: Mr. A. Bradbury; Birmingham, Senior Area Representative: Mr. W. A. Pike; Southampton, Senior Area Representative: Mr. L. Mordecai; Exeter, Representative: Mr. S. R. Moverly.

Senior representatives working from the London Headquarters will be Messrs. A. Ayers, L. W. J. Lovelock, E. C. S. Hunter and H. W. Caldwell. Also working in the London area will be Representatives D. E. Herbert, R. A. Clarke, G. F. Triplow and W. R. Peacock, co-ordinated by Senior Representative F. J. Frost.

RECORD B.E.A. TRAFFIC IN 1953.—British European Airways announces that it carried 1,638,000 passengers in 1953, a record number, with more than 250,000 in August alone.

BRITISH TRANSPORT COMMISSION DEFICIT.—The figure of £31,500,000 mentioned in our December 25 issue as the anticipated deficit for 1953 is the accumulated adverse balance on net revenue at the end of 1952, and not as stated.

Loughton Garage, London Transport, recently put into operation, showing the office and canteen block

Increase Sought in Railway Freight Charges

Application to Minister of Transport by B.T.C. for authority to raise railway freight charges 10 *per cent*

The British Transport Commission has made an application to the Minister of Transport & Civil Aviation for authority to increase railway freight charges and dock and canal charges at the earliest possible date by 10 per cent, but with a limitation of 10s. a ton in the case of merchandise by freight train and perishable traffic by passenger train.

In a statement on January 5 giving the reasons why it has been compelled reluctantly to make this application, the Commission explains that it is not easy in view of future uncertainties to make precise forward estimates either of expenditures or earnings. In consequence it has limited its request to the minimum definitely required, and has accordingly asked the Minister for an increase of 10 per cent which, it is hoped will fill the current budget gap of British Railways. The yield from the proposed increase in railway freight charges is estimated at about £23,000,000 in a full year; from increased dock and canal charges, about £1,000,000-£2,000,000.

Rises in Costs

The last two increases in these charges occurred in December, 1951, and December, 1952, and amounted to 10 per cent and 5 per cent respectively. The Commission had hoped after the last increase that stability had been reached, but as a result of still further rises in costs during 1953, and despite the greater efficiency which has been achieved, a further increase in charges is now stated to be inevitable.

The rise in coal and steel prices early in 1953, it is pointed out, has cost between £4,000,000 and £5,000,000, and changes in the price of steel scrap and certain other commodities have cost about £2,000,000 more. The charge for depreciation continues to rise because the new assets brought into service cost more than the old ones they replace, and additional interest must be provided for the same reason. It is also being found necessary to make a substantial increase in the maintenance expenditures charged to revenue.

Railway Wage Award and Pensions

Finally, the recent award by the Railway Staff National Tribunal of 4s. a week increase in salaries and wages is estimated to cost £6,000,000-£7,000,000 a year, and there is also the cost of financing the new pension scheme instituted for the wages grades.

Whether the railway budget can be kept in balance on the 10 per cent increase now asked for, the Commission states, must depend on various factors. Among them there is the future cost of coal and engineering products; the increasing competition which may seriously affect railway receipts in certain categories of traffics; and perhaps most important the increased efficiency for which the Commission is determined, in conjunction with the trade unions, to make a renewed drive.

Any action on passenger fares, including London Transport road and rail services as well as road and rail services elsewhere, must depend, it is stated, on a number of factors, and particularly on the outcome of negotiations still in progress.

Freight increases since 1947 have been as follows: May 15, 1950, 16⅔ per cent; April 16, 1951, 10 per cent; December 31, 1951, 10 per cent; December 1, 1952, 5 per cent.

There was a public inquiry before the increase was approved in 1950, but there has not been any since.

The Minister of Transport & Civil Aviation, Mr. Alan Lennox-Boyd, stated in the House of Commons last March that the average increase in rail freight charges since January, 1946, had been 97 per cent.

Parliamentary Notes

Transport of Groundnuts by Nigerian Railways

Mr. James Johnson (Rugby—Lab.) on December 16 asked the Secretary of State for the Colonies what had been the total tonnage of the groundnuts crop of Nigeria; how much of that had been transported to Lagos; how much was being stored; and what was the total amount now in pyramids at Kano.

Mr. John Tilney (Liverpool, Wavertree—C.) also asked (1) what was the average weekly tonnage of groundnuts now being transported by the Nigerian railways to port; (2) what tonnage of groundnuts in Nigeria was carried over from the 1952-53 season; and at what cost in carry-over charges and depreciation to the purchaser; and (3) what tonnage of groundnuts in Nigeria was to be purchased by the Nigerian Marketing Board during the 1953-54 season; and at what price.

Mr. Oliver Lyttelton replied that an average of over 7,000 tons a week had been carried to port during the last five weeks. Contrary to hopes entertained ealier this year, about 196,00 tons of the 1952-53 crop awaited transport at October 31, 1953. The additional cost to the Nigerian Groundnut Marketing Board arising from long storage was some £150,000.

Exact figures of the total crop were not available, he said, because of the unknown quantity consumed locally. By December 3, 236,000 tons of the 1953-54 crop had been purchased for export; of this, 7,432 tons had been railed to Lagos, Port, Harcourt, or Baro, and some 70,000 tons stored at Kano. The bulk of the new seasons purchases, however, had yet to be carried to the railheads. The total in pyramids at Kano was 150,000 tons; and some 240,000 tons were in store elsewhere.

Replying to a supplementary question by Mr. Johnson, Mr. Lyttelton said there would certainly be a carry-over, but the position was improving. The crop had risen and, whereas 142,000 tons was purchased for export, in 1950-51, 480,00 tons were estimated for 1953-54. That had imposed a great strain on the railway. He thought the full results of the measures he had taken in this matter would be completed in 1955 when he expected the whole crop could be moved.

Doubling Nigerian Railway Main Line

The Rev. R. W. Sorensen (Leyton—Lab.) asked if anything had been done in regard to laying down another track so that there might be two way traffic between Kano and Lagos. That explanation had been given for years and years, but they still saw the pyramids being built there.

Mr. Lyttelton said he regretted very much that efforts were wasted in trying to grow groundnuts where they would not grow and not on transporting them from where they could grow. Measures with regard to the production of rolling stock and extra rails took a very long time. He had done his best to accelerate the matter and he thought that the full result of those plans would mature in 1955.

Staff & Labour Matters

Pay Increase for London Transport Railwaymen

As a result of talks between representatives of the London Transport Executive and the three railway unions employees of London Transport railways are to receive similar pay increases to those recently afforded to main line railway workers with effect from December 6.

Adult male workers will receive an additional 4s. a week, junior males 2s. 6d. a week, adult females 3s. 6d., and junior females 2s. a week.

The draft agreement between London Transport Executive and the unions provides for them to confer to evolve ways of increasing the efficiency of London Transport by all appropriate means.

Recognising that there is to be an improvement of the standard rates on a percentage basis for salaried and conciliation staff on British Railways, it is also proposed that there would be a meeting between London Transport and the three unions to consider the situation with a view to applying a percentage increase to salaried and conciliation staff of London Transport.

Engineers' Wage Claim

Sir Walter Monckton, Minister of Labour, last week met representatives of the Shipbuilding Employers' Federation and of the Engineering Employers' Federation on separate occasions, also representatives of the C.S.E.U. in an effort to avert the crisis which would arise if the union threat to ban overtime and piecework from January 18 were carried out.

Both the engineering and the shipbuilding employers told the Minister that they were unable to make an offer to increase wages. In the circumstances Sir Walter Monckton decided to take steps to set up courts of inquiry "to inquire into and to report on the causes and circumstances of the disputes in the engineering and shipbuilding industries."

The composition of the courts is the same for both industries. Lord Justice Morris, Lord Justice of Appeal, is Chairman: Mr. C. J. Geddes, Secretary of the Union of Post Office Workers and a member of the T.U.C. General Council, represents the workers' side. Sir Robert Sinclair, Chairman of the Imperial Tobacco Co. Ltd., represents the employers, and there are two independent members, Sir Harold Gibson Howitt, a chartered accountant, and Mr. H. Lloyd Williams, a barrister.

The courts have been asked to start their inquiries without delay and pending the issue of the reports the C.S.E.U. was asked to suspend the proposed ban on overtime and piecework. On January 4 it was announced that the C.S.E.U. Executive had decided to recommend that the ban should be not proceeded with.

BRITISH RAILWAYS WEEKLY COAL TRAFFIC INCREASE.—Over 100,000 tons more deep-mine and opencast coal were conveyed by British Railways last week than in the corresponding week of the previous year. The total for the week was 2,580,830 tons and the weekend figure 249,810 tons. During the week ended December 26, 180,339 tons of iron and steel from principal steelworks and 273,100 tons of iron ore were conveyed.

Contracts & Tenders

De Dietrich & Cie, of Reichshoffen Usines has received from the Madagascar Railways an order for 14 metre-gauge 150 b.h.p. diesel-mechanical shunting locomotives of 24 tons weight.

Fiat S.A. has received an order from the Jugoslav State Railways for a de luxe single-unit diesel-mechanical railcar for the use of the President of Jugoslavia. It is to be powered by two 210 b.h.p. underfloor engines.

The Chilean Transandine Railway section of the Chilean State Railways has placed an order in Switzerland for two combined rack-and-adhesion electric locomotives. The Swiss Locomotive & Machine Works is building the mechanical portion and undertaking erection, and Brown Boveri is supplying the electrical equipment.

The National Railway of Mexico have placed the following orders for diesel-electric locomotives :—

20 of 1,600 h.p. from the Baldwin-Lima-Hamilton Corporation, at a cost of U.S. $185,370 each

Ten of 1,600 h.p. from the American Locomotive Company ($176,297 each)

20 of 1,500 h.p. from General Motors ($163,905 each)

Five of 1,600 h.p. from the Montreal Locomotive Works ($180,112 each)

An order for 57 first class all-steel coaches, accommodating 80 passengers each, has been placed by the Canadian National Railways at a cost of $7.486.000. They are to be built by the Canadian Car & Foundry Company, which is building 161 coaches of the same type for the C.N.R. on orders placed in late 1952. All coaches have single vestibules, air conditioning, picture windows, roller bearings and coil type springing.

British Railways, North Eastern Region, have placed a contract with Samuel Butler & Co. Ltd., Stanningley, for the reconstruction of wrought iron girders and erection of iron and steel work, Thornaby Motive Power Depot.

British Railways, Southern Region, have placed orders as follows :—

Welding Constructions & Repairs Limited, London, S.E.7 : supply and erection of steelwork, Grove Park

C. & T. Painters Limited: internal renovations, Nine Elms "A" Goods Shed

British Insulated Callender's Construction Co., Ltd., London, W.C.1: lighting improvements, Hither Green Marshalling Yard

C. & T. Painters Ltd., London, N.W.10: station renovations, Hayling Island, North Hayling, and Langston

Caffin & Co. Ltd., London, W.C.2: retaining wall on up side, Sydenham

Dorman, Long & Co. Ltd., Luton: reconstruction, South Bermondsey, Southwark Park Road Bridge

L. & W. Whitehead Limited, London, S.W.9: new substations, Selhurst "A," Brockley, Penge "A" and "B," Waddon and West Wickham ; new switching station, Sutton

McCartney & Sons, London, S.W.9: Patent glazing and repairs to roof over platforms 7 to 15, Waterloo Station

British Railways, Western Region, have placed the following contracts:—

Jesse Tildesley Limited, Willenhall: supply of steelworks and pre-cast concrete skewbacks to cross girders for repairs and strengthening of the bridge over the line near Birmingham Snow Hill ; supply of steelwork for covering to platforms Nos. 2 and 3 at Merthyr High Street Station

George Simpson (London) Limited, London, S.W.1: renewal of roof coverings, glazing and guttering at Caerphilly Station

R. W. Naylor Limited, Birmingham, 18: construction of a pump house, settling tanks and drainage works in Oldbury Goods Yard

Boulton & Paul Limited, Norwich: supply and erection of fences in the Gloucester District

J. F. Booth & Son Ltd., Banbury: provision of additional dormitory accommodation at the Staff Hostel, Oxford

Kendall & Gent Limited, Manchester, 18: supply of openside milling machine for Locomotive Works, Swindon

Coventry Machine Tool Works Limited, Halifax: supply of hot bolt forging machine for Locomotive Works, Swindon

Churchill Machine Tool Co. Ltd., Manchester: supply of universal radius link and hole grinding machine for Stafford Road Works, Wolverhampton

Scottish Machine Tool Corporation Limited, Johnstone: supply of heavy duty wheel lathe for Locomotive Works, Swindon

The United Kingdom Trade Commissioner at Melbourne has notified the Export Services Branch of the Board of Trade that the closing date for the call for tender (No. 60048) issued by the Victorian Railways has been postponed from January 20 to March 17. Details appeared in our December 11, 1953, issue.

The Special Register Information Service of the Board of Trade, Export Services Branch, reports that the United Kingdom Trade Comissioner at Madras has notified a call for tenders issued by the Madras Port Trust for 25 broad-gauge double-side tipping wagons of 10/11 cu. yd. capacity to transport sand, stone-metal or iron ore.

The wagons should be of special heavy pattern, self-emptying and self-righting type. They should be suitable for loading with grabs and for carrying sand, stone-metal or rubble, or iron ore, with a capacity of 300 cu. ft. (10/11 cu. yd.) or a load up to 20 tons. They should have wheels and wheelbases suitable for traversing 400 ft. curves on 5 ft. 6 in.-gauge 75 lb. f.b. single track. The buffers preferably of spring type, should be at a height of 3 ft. 6 in. above rail at 6 ft. 5 in. centres. The body should be of sturdy build of $\frac{1}{4}$ in. steel plates at sides and $\frac{1}{2}$ in. bottom, suitably stiffened and built for grab loading. The axleboxes should be with precision bearings with springs of laminated (leaf) type. The frame should be rigid with suitable coach gear for holding the body upright and in the tipped position.

The height of the edge of the wagon body above rail level should be about 9 ft. 6 in. to 10 ft. and the heaped height at centre under 14 ft. above rail level. The wagons should have drawbar hooks and turn buckle connections, etc., generally conforming to I.R.S. Specification. Each wagon should be provided with lever type brakes. The rakes of these wagons will be hauled by broad-gauge locomotives of I.R.S. type developing about 15 tons drawbar pull; all couplings must be suitable for these conditions. Travelling speeds of the locomotives will not exceed 15 m.p.h. on the straight. The buffers, wheels, axleboxes, brakes, couplings, etc., are generally to conform to I.R.S. Specification or its equivalent for wagons. No vacuum braking equipment is required.

The closing date for receipt of tenders is 3 p.m. on January 15. Earnest money of Rs.2,500/- is required with each tender and must be deposited at the office of the Deputy Chief Accountant (Engineering), Madras Port Trust, who will issue the necessary receipt. Tenders and receipts should be enclosed in sealed envelopes endorsed, "Tender for 25 Nos. Broad Gauge double sided tipping wagons," and addressed to the Chief Engineer, Madras Port Trust, Madras. Time of delivery is important and must be clearly stated in tenders.

One copy of the specifications and conditions of tender may be obtained on loan from the Export Services Branch, Lacon House, Theobalds Road, W.C.1.

Notes and News

Railway Engineer Required.—Applications are invited for the post of railway engineer, under 40 years of age, required by the Skefko Ball Bearing Co. Ltd., of Luton. See Official Notices on page 55.

Assistant Engineer Required.—Applications are invited for the post of assistant engineer required by the Government of Iraqi State Railways for one tour of three years. See Official Notices on page 55.

Mechanical Engineers Required.—Applications are invited for the posts of senior technical assistant and locomotive draughtsman, between 30 and 35 years of age, required by a British railway operating in Bolivia. See Official Notices on page 55.

U.S. Aid for Indian Locomotive and Wagon Acquisition.—Under an agreement concluded with the United States, India will receive $20,000,000 to buy 100 locomotives and 5,000 wagons from any part of the world.

Eastern Region Silk Screen Poster.—The poster reproduced below, designed and produced by British Railways, Eastern Region, is executed in 11 colours by silk screen process. Eight colours were used for the greetings card. Lettering is green on a cream chequered background on white. The two shades of blue in the sky of the greetings card were blended and printed in one operation. Light grey was then printed all over the picture below the sky, followed by medium and dark greys, white,

Eleven-colour silk screen poster produced by the Eastern Region of British Railways

orange, brown, and black. The finished card was varnished. A similar poster was prepared in connection with Christmas tree appeals at stations. Altogether 150 copies of the two posters were printed and displayed at stations in the Eastern Region, at York, and in Scotland.

Kent & East Sussex Passenger Service Withdrawn.—The last passenger train on the Kent & East Sussex line between Headcorn and Robertsbridge ran on January 2. The line remains open for goods traffic between Robertsbridge and Tenterden Town, but the section thence to Headcorn has been closed.

Programme to Strengthen Bridges Over Railways.—The Minister of Transport is putting into operation a programme for strengthening bridges carrying trunk roads over railways. There are some thousands of weak bridges in Britain, many over railways. A programme of reconstruction had to be suspended when the war began, but new methods have been devised for assessing the strength of weak bridges. Where bridges are shown to be dangerous they will be reconstructed or orders will be made to restrict the traffic using them. On secondary roads the responsibility rests with local highway authorities.

Standing in Passenger Compartments.—At a recent inquest into the death of a passenger stated to have fallen through the door of the compartment of a football special in which 15 persons were travelling, in a tunnel near Glasgow Cross, criticism of the crowded state of the compartment was made by Mr. Laurence Dowdall, a solicitor, and was objected to by a solicitor representing British Railways. Mr. Dowdall said he was entitled to find out if there was any regulation which laid down the numbers of persons who might stand in a compartment. A verdict of accidental death was returned.

"Deccan Queen" in Collision.—Forty-seven passengers are reported to have been injured, on December 29, when the "Deccan Queen," running between Poona and Bombay, ran into a stationary local train at Masjid, the first station out of Bombay Victoria Terminus on the Central (former Great Indian Peninsula) Railway. The "Deccan Queen," which is electrically hauled, is shown in the current timetable as covering the 119 miles from Poona to Victoria Terminus in 2 hr. 55 min. including three stops and descent of the Western Ghats; eastbound the timing is shown as 3 hr.

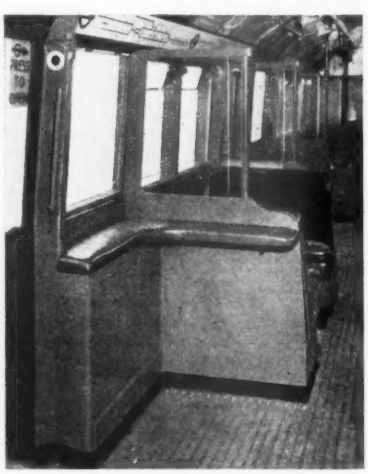
International Sleeping Car Share Trust Limited.—The Chairman, Mr. Stanley Adams pointed out in his recent statement that the profit and loss account for the past year showed one full year's income of £18,717 derived from the trust holding of Wagons-Lits shares, being a dividend at 5 per cent on the 30,000 preference shares and at 5 per cent on the 495,000 ordinary shares, an increase of 1 per cent over the previous year. The net profit for the year was £12,335, increasing the unappropriated balance to £48,151. The question of dealing with this, he said, presented difficulty. If they had paid a dividend of even 1 per cent gross (£52,500), even then one-third of the cost in cash would be paid away as profits tax. The business of the Wagons-Lits Company in 1952 was characterised by some stability in economic affairs, but the slowing down which began to make itself felt in the first months of 1953 had continued, aggravated by tariff increases at the end of the first half-year on certain railways at a time when air transport companies were extending much reduced tourist rates in Europe. The French railway strike in August, would considerably influence results for 1953.

Institution of Locomotive Engineers.—On Wednesday, January 20, Mr. A. W. Manser, Chief Mechanical Engineer, Railways, London Transport Executive, will deliver a paper before the Institution of Locomotive Engineers at the Institution of Mechanical Engineers, Storey's Gate, S.W.1, at 5.30 p.m., entitled "The wearing parts of electric rolling stock—a review of the experience on the London Transport system." Light refreshments will be served at 5 p.m.

German Participation in Indian Steel Plant Project.—The Indian Government and the German firms of Fried. Krupp A.G. and Demag A.G. have signed an agreement to set up in India a £52,000,000 steel plant. It will have an initial capacity of 500,000 tons of steel, rising to 1,000,000 tons in a year. A private limited company, to be known as Hindustan Steel Limited, will be formed, with an authorised capital of £75,000,000. The Indian Government will hold 80 per cent of the shares and the German combine the rest. Mr. A. K. Chanda, Secretary to the Ministry of Production, said the plant would make India the world's cheapest producer of quality steel. Representatives of Krupps & Demag have inspected sites for the plant. Their final recommendation is expected to be made soon. Krupps and Demag will be responsible for design, layout and erection. Krupp is being lent DM. 50,000,000 for four years by the Frankfurt Export of Credit Institute to finance part of the cost. The German Federal Government will then cover the period 1957-61, India will contribute from its own resources.

Bridge Construction between Whittlesford and Great Chesterford, Eastern Region.—In connection with bridge reconstruction work being carried out between Whittlesford and Great Chesterford, Eastern Region, from 6 p.m. on January 9 to 6 a.m. on January 11 trains which normally travel by this route will be diverted and subject to some delay. The train service to Great Chesterford and Whittlesford will be withdrawn throughout the period of the work and a special bus service will connect with trains at Audley End and Shelford or Cambridge.

London Transport Experimental Seats



Bench seats for rush-hour accommodation, which were referred to in our January 1, 1954, issue

Forecast of Record Year for Tourism.—Mr. James Maxwell, General Manager of Thos. Cook & Son Ltd. has made a forecast that 1954 will be a record year for tourism. He believes that 100,000 more Britons will spend holidays on the Continent than the million who did so last year. That the travel allowance had not been extended to the dollar countries was absurd, he said, when nationals of other countries could take holidays in Canada and the U.S.A.

Durham Elvet Branch to Close.—British Railways, North Eastern Region, announce that as the Durham Elvet Branch is being worked at considerable loss it has been found necessary to close it on January 11. The only station concerned is Durham Elvet itself, which deals only with freight traffic. Alternative freight facilities are available at Durham Gilesgate which will remain open. The arrangements previously in force for running special passenger trains to Durham Elvet on Miners' Gala Day at Durham will not be continued in future years.

Relaying at Chester Station.—Every Sunday until well into the summer the work of renewing the permanent way at the Holyhead end of Chester General Station will be undertaken. This work, which began early in November, includes the renewal by the London Midland Region of 90 pairs of points and over 170 crossings, as well as the relaying of plain tracks. The laying of the permanent way and installation of signalling equipment is being carried out in 23 stages, one stage on each Sunday. The remaining seven stages are for lifting and ballasting the track, and preparatory work by the signalling engineers. When these have been completed further renewals will be carried out as far as No. 6 signalbox on the Holyhead line and No. 5 signalbox on the Birkenhead line. Flat-bottom type track will be used mainly in the work. A special all-welded layout has been installed at the intersection of the Birkenhead and Holyhead lines near Chester No. 4 signalbox. The new track is being prefabricated at Mold during each week and is laid by a special 10-ton diesel crane on the following Sunday.

Toledo Woodhead Springs: Improved Results.—The Chairman of Toledo Woodhead Springs Limited, Mr. Frank Woodhead, who presided at the annual general meeting on December 30, said in his circulated statement that results for the year ended August 31, 1953, showed an improvement on the relative preceding years. Trading profit had increased from £93,441 to £107,173 and the output in quantity and value was a record. Increases in production costs had been absorbed without corresponding adjustments to selling prices, which on the average were lower than in the previous year. The export field, he added, did not come up to expectations due, in the main, to the freezing of import licences in foreign markets. Prospects had recently improved and the volume of export business in the current year was likely to be greater than in each of the last two financial years. The directors had recommended that while maintaining the dividend of 20 per cent a bonus distribution of

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

A.E.C. LTD. require Designers and Draughtsmen for development of Diesel Trains. Premises at Boreham Wood, Herts. Work is in connection with a new project on behalf of British United Traction Co. Ltd. Automobile and railway experience would be an advantage. Permanent employment and pension scheme. Applications in writing to STAFF RECORDS OFFICE, A.E.C. Ltd., Windmill Lane, Southall, Middlesex, stating age, experience and salary required.

DRAUGHTSMEN, junior, with some experience in the preparation of engineering drawings for reproduction. Good lettering essential. London area. Five-day week. Write, stating age, experience and salary required, to Box 2, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

N.E.R. HISTORY.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10*s.* 6*d.*—*The Railway Gazette*, 33 Tothill Street, London, S.W.1

MECHANICAL ENGINEERS required by British Railway operating in Bolivia: (*a*) Senior Technical Assistant, (*b*) Locomotive Draughtsman. Candidates, preferably A.M.I.Mech.E. or B.Sc. (Engin.), must have good experience in drawing office and workshops of locomotive builders or railway. Age 30/35, preferably married but no suitable educational facilities for children. Knowledge Spanish an advantage but not essential. Commencing salary £850 p.a., plus quarters, passages, allowances, etc. Write Box 7274, c/o Charles Barker & Sons Ltd., 31, Budge Row, London, E.C.4.

ASSISTANT ENGINEER required by the GOVERNMENT OF IRAQI STATE RAILWAYS for one tour of three years. Salary etc. equivalent to between £135 and £164 per month according to experience and qualifications. Provident Fund. Free passages for officer only. Leave on full salary. Candidates should be A.M.I.C.E. or hold an Engineering degree recognised as granted exemption from Sections A and B of the examination. They must have had experience in general construction work, preferably including Railway Layouts and ancillary works. Write to the CROWN AGENTS, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M2B/30088/RA.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25*s.* per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

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2½ per cent less tax, be made, making 22½ per cent for the year and this was agreed at the meeting.

Euston-Belfast via Heysham Service to be Accelerated.—During next summer British Railways, London Midland Region, are to cut the travel time from Euston to Belfast via Heysham by 85 min. The departure time from Euston will be postponed from 4.55 to 6.20 p.m., with arrival in Belfast at 7 a.m., as at present.

Jonas Woodhead & Sons Ltd.—The final dividend of 12½ per cent declared by Jonas Woodhead & Sons Ltd. makes a total dividend for the year ended September 30 last of 17½ per cent, compared with 15 per cent for 1951-52. Group profit was £198,675 (£179,294) and net profit £54,521 (£50,956). To this is added taxation of former years no longer required of £5,840 (nil) and share of revenue surplus of new subsidiaries applicable to investments in such subsidiaries before acquisition of control of £38,221 (nil).

Reconditioning of Water Troughs at Church Lawford.—For ten weeks from January 1, British Railways, London Midland Region, are reconditioning the water troughs at Church Lawford, near Brandon & Wolston, with the possibility of up to 15 min. delay to expresses between Euston and Birmingham New Street. On weekdays engines have to stop at either Coventry or Rugby to take water and on Sundays, when the actual work is being performed, all trains must be diverted via Marton and Leamington.

Manchester-Sheffield-Wath Electrification : Trial Running of Co-Co Locomotive.—The first of seven 2,500 h.p. six-axle electric locomotives under construction for the Manchester-Sheffield-Wath electrification scheme has begun trial running between Dukinfield and Crowden. These locomotives, which each weigh over 100 tons, will be used for hauling both heavy freight and passenger trains. The mechanical parts of the locomotives are being built at the Gorton Locomotive Works of British Railways (Eastern Region) and the electrical equipment is being supplied and erected by Metropolitan-Vickers Electrical Co. Ltd. The bodies of the locomotives, which house the electro-pneumatic control equipment, starting resistances and auxiliary machines, are mounted on two three-axle bogies, each of which is equipped with three 415 h.p. motors. Drawgear and buffers are carried on the bodies. The locomotives are fitted with electrically-heated boilers for passenger train heating, and with equipment for regenerative braking.

Memorial Service for Victims of New Zealand Accident.—A public memorial service for the victims of the railway disaster at Tangiwai in New Zealand is being held today (Friday) at Westminster Abbey. The Dean of Westminster, assisted by the Precentor is officiating. The address is being given by the Rt. Rev. G. V. Gerard, formerly Bishop of Waiapu, New Zealand, and now Assistant Bishop of Sheffield.

Metropolitan Line Electric Locomotive Livery.—After more than ten years in austerity grey paintwork, the 16 London Transport Metropolitan Line electric locomotives are being repainted in their original livery of maroon and gold. This is being done as locomotives pass through Acton Works in the course of normal maintenance. The first to be completed, *Oliver Goldsmith*, now back in service, is illustrated below. These locomotives are being given back the nameplates removed during the war. Names include *Sherlock Holmes, Michael Faraday,* and *Thomas Lord;* the last named owned the cricket ground which bears his name and immediately adjacent to which are the twin single-line tunnels of the Metropolitan Line between St. Johns Wood Road and Marlborough Road stations (both now closed) on the Baker Street to Finchley Road section.

J. Brockhouse & Co. Ltd.—Presiding at the recent annual general meeting, Mr. J. L. Brockhouse, Chairman & Managing Director, said that whilst the subsidiary, the Indian Company of the U.S.A., had sustained serious losses, the venture in South Africa was beginning to prove successful; the Rhodesian company had been profitable until this last year, when a very small loss had been made because of a change of agencies. The directors had stated in their report that the majority of the companies in the group had made a satisfactory profit, and he was confident they would be able to show a reasonable profit in future years, subject to the nor-

Metropolitan Line locomotive "Oliver Goldsmith" repainted in its original livery

mal rise and fall in trade and to repercussions in national and international events. The report and accounts were adopted and the total dividend of 6 per cent on the ordinary stock was approved.

Canterbury-Whitstable Track Lifted.—The track of the Canterbury-Whitstable branch of the Southern Region has been removed. The branch closed at the end of 1952, but temporarily reopened for repair work after the flooding at Whitstable last year.

Metalock (Britain) Limited Film.—A film demonstrating the Metalock system of repair to plant and machinery has been shown by Metalock (Britain) Limited. The system consists of drilling out the crack or fracture in a casting and inserting a specially designed high-tensile Metalock strip. The holes are jig drilled, the number of holes depending on the nature of the fracture. Fixing is finally accomplished by inserting a series of studs around each edge of the crack between the Metalock key, giving complete rigidity between the key piece and the parent metal; the whole is then dressed flush. Special preparation and finish are necessary where the equipment is subject to pressure; plant subject to a pressure of 6,000 p.s.i. has been successfully dealt with, and the repairs shown in the film included a ship's propeller, cold rolling mill, and a high-power press. The method of repair, it is stated, is accepted by Lloyd's and other insurance concerns. Repairs can be executed either in situ or in the Metalock workshops.

Forthcoming Meetings

January 11 (*Mon.*).—Institute of Transport, at the Jarvis Hall. (R.I.B.A.), 66, Portland Place, W.1, at 5.45 p.m. Paper on "Transport in the municipal field: problems of the day," by Mr. W. M. Little.

January 11 (*Mon.*).—Historical Model Railway Society, at the headquarters of the Stephenson Locomotive Society, 32, Russell Road, London, W.14, at 7 p.m. Talk on "The Decapod," by Mr. W. O. Skeat.

January 12 (*Tue.*).—Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2, at 6 p.m. Paper on "Level crossing protection," by Mr. J. Loosemore.

January 12 (*Tue.*).—South Wales & Monmouthshire Railways & Docks Lecture & Debating Society, in the Angel Hotel, Westgate Street, Cardiff, at 6.30 p.m. Paper on "The work of the road motor engineer's department," illustrated by lantern slides, by Mr. G. S. Halliday, Road Motor Engineer, British Railways, Western Region, Slough.

January 13 (*Wed.*).—Stephenson Locomotive Society, Midland Area, at 71, Edmund Street, Birmingham, at 7.15 p.m. Illustrated lecture on "Suburban railway operation," by Mr. C. F. Klapper.

January 13 (*Wed.*).—Institute of Transport, at 80, Portland Place, London, W.1, at 6 p.m. Education discussion meeting on "The elements of statistics and its place and treatment in the Institute examination scheme," by Dr. W. R. Buckland.

January 13 (*Wed.*).—Permanent Way Institution, Leeds & Bradford Section, at 6.30 p.m. Evening visit to Hunslet Engine Co., Ltd. Works, Jack Lane, Leeds 10.

January 13 (*Wed.*).—Railway Students' Association, at the London School of Economics and Political Science, Houghton Street, Aldwych, W.C.2, at 6.15 p.m. Paper on "The trader's outlook on railways," by Mr. M. F. Barnard, Chairman, Traders' Co-ordinating Committee.

January 14 (*Thu.*).—British Railways, Western Region, London, Lecture & Debating Society, in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, W.2, at 5.45 p.m. Railway quiz—questions on railway operating and administration. Questionmaster Mr. H. G. Bowles.

January 16 (*Fri.*).—Permanent Way Institution, East Anglia Section, at Ipswich. Paper on "Railway Engineering Research" by Mr. J. C. Coach.

January 16 (*Sat.*).—Stephenson Locomotive Society, North Eastern Area, at the Chemical Industry Club, Lovaine Place, Newcastle-upon-Tyne, at 6.15 p.m. Illustrated paper on "Railways of Italy in peace and war," by Mr. R. A. Savill.

January 18 (*Mon.*).—Institution of Electrical Engineers, at Savoy Place, London, W.C.2, at 5.30 p.m., tea at 5 p.m. Discussion on "The role of the consulting engineer," opened by Mr. T. G. N. Haldane.

January 18 (*Mon.*).—Institute of Transport, Metropolitan Section, at 80, Portland Place, London, W.1, at 5.30 for 6 p.m. Paper on "In all directions—trade and transport," by Mr. W. J. Phillipson.

January 19 (*Tue.*).—Stephenson Locomotive Society, Midland Area, in the B.T.H. Social Rooms, Holyhead Road, Coventry, at 7.30 p.m. Lecture on the "History of some of the railways in the Coventry area," by Mr. C. R. Clinker.

Railway Stock Market

After starting the new year with a fresh vigour, stock markets turned a little cautious because sentiment was affected by higher wage claims and fears that industry faces rising costs. British Funds eased after news of the decline in British gold and dollar reserves last month; this monthly deficit, the first since December, 1952, was much smaller than expected, because it was after providing the annual payment of $181,000,000 in respect of U.S.A. and Canadian loans.

Absence of an increase in the Shell Transport interim dividend, which is unchanged at 5 per cent, tax free, affected markets, because an increase had been widely predicted. The decision has been taken as indicating caution because of the prospect of lower oil prices in view of the expansion in world oil production which will show another big increase this year if there is a Persian settlement.

On the other hand, the further batch of dividend increases and in particular the increased payments made by the big banks, shows a general tendency to continue following a more liberal dividend policy. Many industrial shares are moving higher in anticipation of larger dividends, but not all hopes can be expected to be borne out, and some shares may react sharply from current levels. It is however being widely assumed that markets are likely to remain strong and active in the next few months because of expectations of the Budget bringing fresh reductions in taxation.

Activity in the unified ordinary stock of Midland Railway of Western Australia remained a feature. Business ranged between 25 and 27. Before the important oil discoveries in Western Australia this stock was quoted at 12½. The 4 per cent debentures have been dealt in fairly actively around 45.

Dorada Railway ordinary stock continued to attract attention and strengthened to 62, compared with 61 a week ago; the 6 per cent first debentures were dealt in around 89. Guayaquil & Quito 5 per cent first bonds have transferred around 42½, and Chilian Northern 5 per cent debentures at 29. After easing to 8, Antofagasta ordinary stock strengthened to 8½, but the preference stock receded from 42½ to 41.

United of Havana second income stock changed hands fairly actively on pay out estimates, but at 42 were the same as a week ago; the consolidated stock remained at 6⅛.

There was rather less business in Manila Railway issues because the Chairman had no news of any fresh developments at the recent annual meeting. Holders of the stocks will have to continue to exercise patience, but sooner or later the company can expect fair treatment in respect of its holding of Manila Railroad bonds, and then its debentures and shares would be worth well over current market prices. The "A" debentures have lost a point at 79, and the "B" debentures were 69, while the preference shares eased 3d. at 8s. and the ordinary shares remained at 4s.

Canadian Pacifics have come back to $39xd. The 4 per cent preference stock was £68¼xd and the 4 per cent debentures firmed up to £87. White Pass no par shares were fractionally lower at $26⅛, and the convertible debentures lost a point at £94.

Among road transport shares a slightly easier tendency was in evidence with Southdown at 28s. 9d., West Riding 26s. 9d., and Lancashire Transport 49s. 6d.; but B.E.T. 5s. deferred units were strong and active again on higher dividend hopes, and have risen on balance from 38s. to 40s. 1½d.

Engineering and kindred shares remained quiet in view of the higher wage claims, but also of a tendency to await news whether particulars of the next issue of denationalised steel shares is to come out this month. United Steel shares are still at a discount, and are unlikely to go to a premium until the final call on these shares is paid at the end of this month, because meanwhile there may be a fair amount of selling by those who do not wish to make this payment. The market view is that the next steel issue, which may be in respect of Lancashire Steel or Stewarts and Lloyds, will be left until United Steel shares go to a premium, otherwise the new issue might have to be made at a price showing a yield of as much as 8 per cent. Vickers have lost 1s. at 47s. 9d., but Guest Keen shares were better at 51s. 3d., Ruston & Hornsby 39s. 6d., and T. W. Ward 82s. 3d.

Charles Roberts 5s. shares were in demand and have moved up further from 18s. 3d. to 18s. 9d. Beyer Peacock strengthened from 28s. 9d. to 29s. Vulcan Foundry were 6d. up at 22s. 6d.; North British Locomotive improved to 13s.; Hurst Nelson kept at 42s., while Gloucester Wagon 10s. shares were 15s. 9d. and Wagon Repairs 5s. shares 14s. 7½d.xd.